SERVICE MANUAL

PAL - ~~SECAM~~ COLOUR TV RECEIVER
CHASSIS NO : P - 943

SPECIFICATIONS :

Receiving System		PAL - SECAM B/G
Receiving Channels		VHF CH.2 to CH.12 UHF CH.21 to CH.69 CATV S1 - S40
Intermediate Frequency	B/G	Picture IF carrier frequency 38.9 MHz. Sound IF carrier frequency 33.4 MHz.
Audio Output		5W (16 OHM)
Antenna		75 Ω unbalanced
Power Requirements		220V ~ 50 Hz.
Power Consumption		14" : 80W 20" : 100W 21" : 110W

SAFETY INSTRUCTIONS

WARNING : BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION," "SAFETY PRECAUTION" AND " PRODUCT SAFETY NOTICE" DESCRIBED BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 25 kV at zero beam current (minimum brightness). The high voltage must not, exceed 27 kV under any circumstances.
   It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE.

SAFETY PRECAUTION

1. Potentials as high as 25.000 volts are present when this receiver is operating. Operation of the receiver outside the cabinet or with back board removed involves a shock hazard from the receiver.
   a. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
   b. Always discharge picture tube to picture tube ground (aquadug ground) before handling tube. And alwalys remove all pcb connections like deflection yoke connectors (P401), CRT PCB and anode cap when discharging the tube.
   c. Perfectly discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the chassis parts list.
3. When replacing a high wattage resistors (metal oxide film resistors) in circuit board, keep the resistors 10mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver can be operated under AC 200 ~ 240 volts, 50 Hz. NEVER connect to DC supply or any other power.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special parts safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY RADIATION.

CONTENTS ..... PAGES

INTRODUCTION 1
BLOCK DIAGRAM OF THE SYSTEM 2
LINE UP OF IC'S 2
COMPONENT CODING 3
ALIGNMENTS 3
Alignment Points on Main and CRT PCB 4
A - IF Alignment 5
B - Main Supply Voltage Alignment 5
C - RF AGC Alignment 5
D - Horizontal Position Alignment 5
E - Vertical Height Aligment 5
F - Vertical Linearity Alignment 5
G - W/B (white/balance) Alignment 5
H - Focus Alignment 6
I - Purity Alignment 6
J - Central Convergence Alignment 6
K- Circumference Convergence Alignment 6
REMOTE CONTROL SECTION 8
A - Description of the PCA84C641 / CTV 322S 8
B - Short Specifications of PCA84C641 / CTV 322S 8
C - PCA84C641 / CTV 322S Pin Description 9
POWER SUPPLY SECTION 11
A - Block Diagram of Power Supply 11
B - Features of TDA 4601 12
CHROMA, VIDEO, IF, SOUND AND DEFLECTION SECTION 12
A - General Description of TDA 8362 12
B - Features of TDA 8362 12
Block Diagram of TDA 8362 12
C - Pin Descriptions of TDA 8362 13
Sections of TDA 8362 (Block Diagrams) 13
D - SECAM Decoder (TDA 8395) 16
Block Diagrams of TDA 8395 16
E - Pin Descriptions of TDA 8395 16
F - Baseband Delay Line (TDA 4661) 17
G - Pin Descriptions of TDA 4661 17
Block Diagram of TDA 4661 17
H - Vertical Deflection Circuit (TDA 3653 B) 18
I - Audio Amplifier (TDA 7056 A) 19
TROUBLE SHOOTING 21
PART LIST 25
CIRCUIT DIAGRAM

INTRODUCTION

P943 is a remote controllable single chip TV chassis which is used to receive PAL / SECAM , B/G and Broad-casting.

This Service Manual contains descriptions of system, definations of IC's, Alignments, Trouble Shooting Charts, Part List and Circuit Diagram.

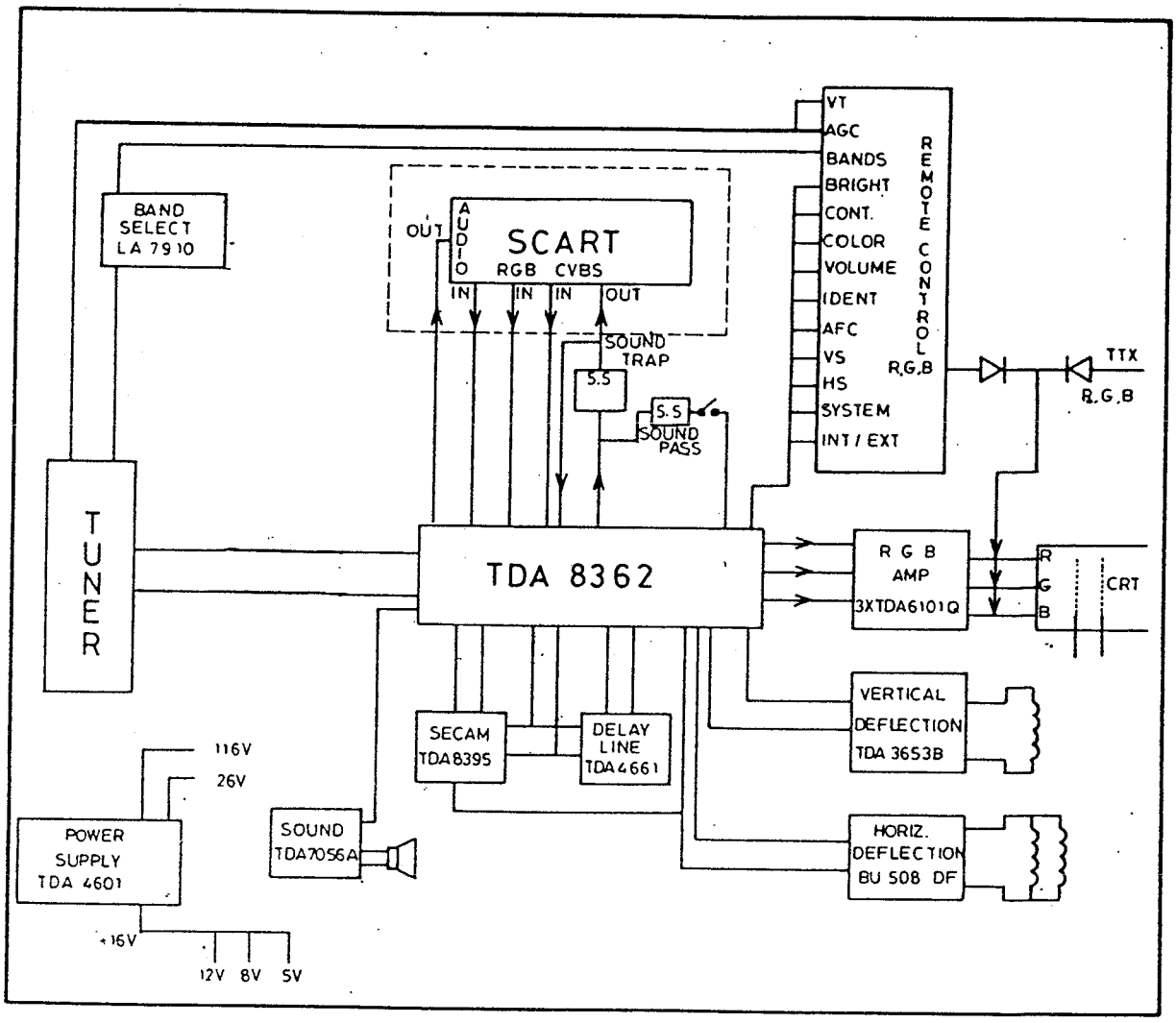


Fig. 1- Block diagram of the System

LINE UP OF IC'S		
POSITION NUMBER	IC	SPECIFICATION
IC101	LA7910	Tuner band select IC
IC102	PCA 84C641 / CTV 322S	Remote Controlled Micro Processor
IC103	24CO2	EEPROM
IC104	LTM 9034	Infrared Remote Control Receiver Module
IC201	TDA 8362 N3	Single Chip Multi System TV Processor
IC202	TDA 8395	SECAM Decoder
IC203	TDA 4661	Baseband Delay Line
IC301	TDA 7056A	Audio Amplifier
IC501	TDA 3653 B	Vertical Deflection Output
IC801	TDA 4601	SMPS Controller
IC802	LM 7808	8V Voltage Regulator
IC803	LM 7812	12V Voltage Regulator
IC804	LM 7805	5V Voltage Regulator

COMPONENT CODING

100 Series : Remote Control Unit, Tuner

200 Series : Video - Luminance - Chroma processing

300 Series : Audio stage

400 Series : Horizontal Deflection Stage

500 Series : Vertical Deflection Stage

600 Series : CRT PCB

700 Series : Scart components

800 Series : Power Supply Stage

ALIGNMENTS

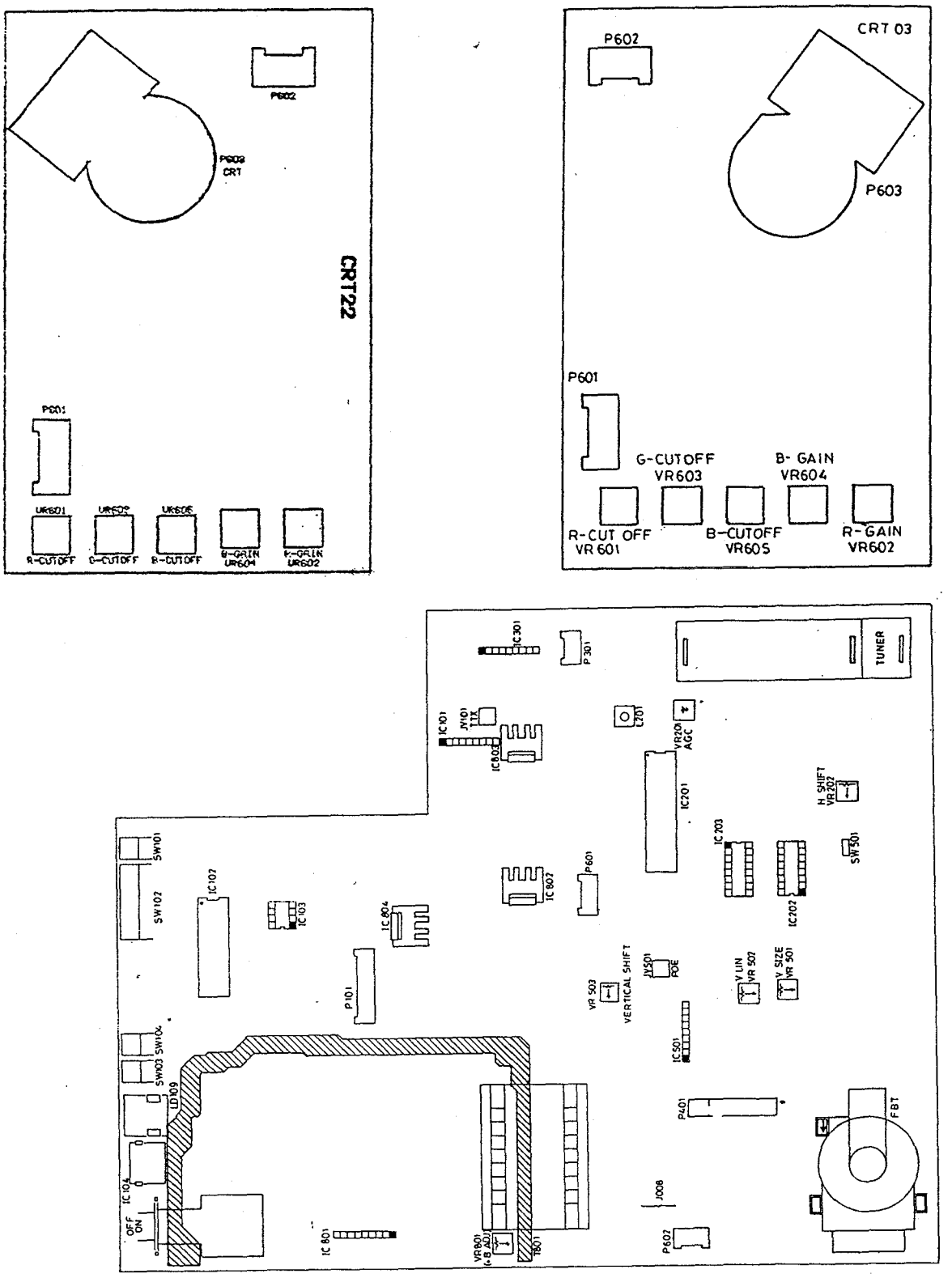


Fig.2 Alignment Points on Main and CRT PCBs.

A- IF Alignment

Equipment : Pattern Generator
Digital Multimeter

Alignment procedure :

i- Set RF frequency to 38.9 MHz and turn RF amplification to maximum on pattern generator.
ii- Connect RF out of pattern to IF output pins of tuner.
iii- Connect voltmeter to pin 44 of IC201.
iv- Adjust voltage to 3.5 V turning L201 Toko coil. You may detect different 3.5 V set points. The exact set point is the point that the voltage changes very rapidly.

B - Main Supply Voltage Alignment

Equipment : Pattern Generator
Digital Voltmeter

Alignment Procedure :

i - Set brightness and contrast to max.
ii - Apply gray scale from pattern.
iii - Connect voltmeter to J008
iv - Adjust voltages to 116 V.

C - RF AGC Alignment

Equipment : Pattern Generator
Digital Voltmeter

Alignment Procedure :

i - Apply 60 dB (1mV) gray scale signal from Pattern Generator.
ii - Connect the probe of the voltmeter to the AGC pin of the Tuner.
iii - Adjust VR201 precisely to the point where the AGC voltage just starts falling down from its maximum voltage.

D- Horizontal Position Alignment :

Equipment : Pattern Generator

Alignment Procedure :

i - Apply crosshatch or circle from pattern generator.
ii - Central the picture by VR202

E - Vertical Height Alignment

Equipment : Pattern Generator

Alignment Procedure :

i- Apply crosshatch and circle together from pattern generator.
ii- Adjust VR501 to get a perfect circle and to balance the picture vertically.

F - Vertical Linearity Alignment :

Equipment : Pattern Generator

Alignment Procedure :

i - Apply crosshatch and circle together from pattern generator.
ii - Adjust VR502 to equalize the intervals among horizontal lines and to get a perfect circle.

G - W/B (White - Balance) Alignment :

Equipments : Pattern Generator

Alignment Procedure :

i - TV must be warmed up at least 20 minutes.
ii - Apply white raster from pattern generator.
iii - Check that variable resistors on CRT card are on middle position.
iv- Set contrast and brightness to maximum and set screen to minimum.
v - Open SW501 and turn variable resistor of screen to clockwise until a single color just appears on tube.
vi - Add other two main color on it by cut off variable resistors to get a white line.
vii - Close SW501 and check if raster is white.
viii - If not, adjust gains (VR602 and VR604) to have a proper white.

H- Focus Alignment :

Equipment : Pattern Generator

Alignment Procedure :

i - Apply crosshatch signal from pattern generator.

ii - Adjust variable resistor of focus to get a clear picture.

I - Purity Alignment :

Equipment : Pattern Generator

Alignment Procedure :

i - TV must be warmed up at least 20 minutes before adjustment.

ii - Demagnetize CPT using a degausser.

iii - Set contrast and brightness to maximum.

iv - Apply green raster from pattern generator.

v - Remove rubber wedges.

vi - Loosen the clamp screw holding the yoke and slide the yoke forward until end of the neck.

vii - Rotate purity magnet (See Fig.4) until a green belt is obtained on the center of the screen. At the same time, center the raster vertically, adjusting the magnet.

viii - Move the yoke slowly to backward until you get a uniform green raster. Tighten the clamp screw.

ix - Check the purity of the red and blue raster.

J - Central Convergence Alignment :

Equipment : Pattern Generator

Alignment Procedure :

i - TV must be warmed up at least 20 minutes before adjusting.

ii - Apply crosshatch pattern from pattern generator.

iii -Change the angle between two 4 - pole convergence magnets to superimpose the red and the blue vertical lines at the center area of the screen. (See Fig. 4 and 5)

iv - Rotate both two 4 - pole convergence magnets while keeping the angle constant between them, to superimpose the red and the blue horizontal lines at the center area of the screen. (See Fig. 4 and 5)

v - Now, you superimpose red and blue lines. (Red/Blue)

vi - Repeat step iii. and iv. to superimpose red/blue and green lines using two 6 - pole convergence magnets.

vii - You may repeat step iii. and iv. for 4 - pole convergence magnets because of interaction between these adjustments, until you have a satisfactory result.

K- Circumference Convergence Alignments :

Equipment : Pattern Generator

Alignment Procedure :

i - Loosen the clamp screw of the deflection yoke to allow the yoke to tilt.

ii - Move the front of the deflection yoke up or down to obtain the best convergence in circumference. (See Fig. 5)

iii - Push the wedges into the space between yoke and tube to fix the best position.

iv - Recheck overall convergence and fix the wedges.

v - Tighten the screw.

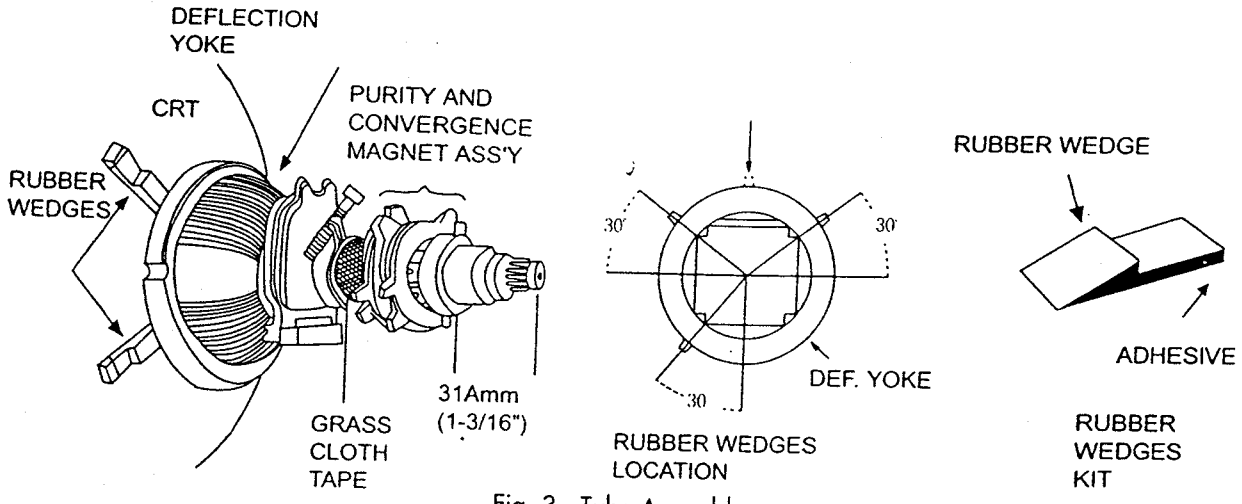


Fig. 3 - Tube Assembly

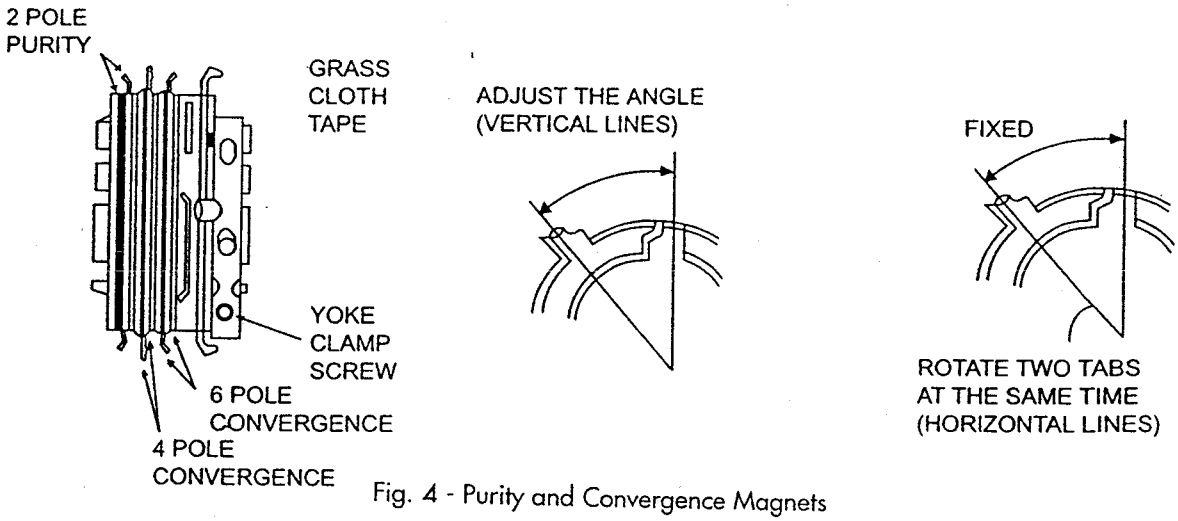


Fig. 4 - Purity and Convergence Magnets

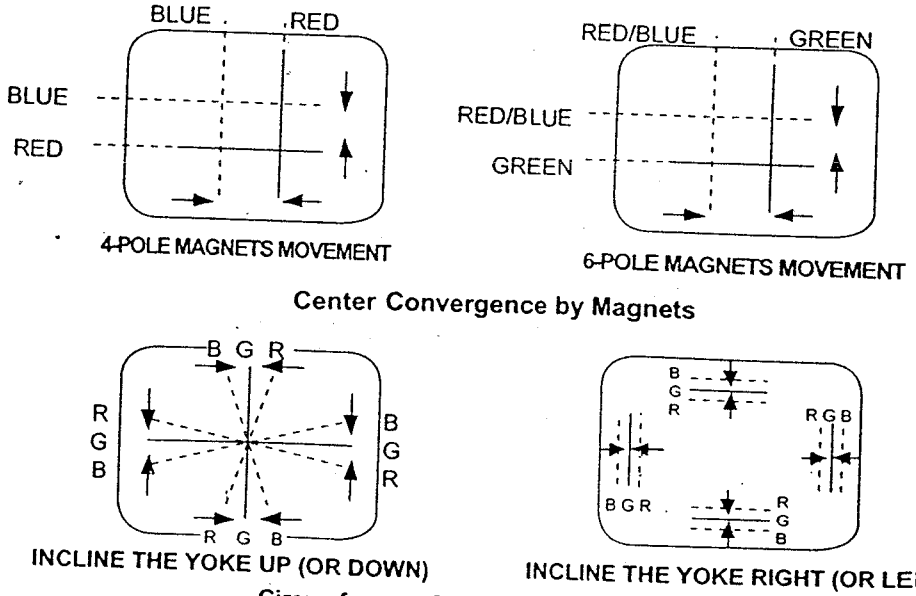


Fig. 5 - Center and Circumference Convergence

REMOTE CONTROL SECTION

A - Description of the PCA 84C641 /CTV 322S

CTV322S is a television receiver control system, based on the PCA84C641 microcontroller. It is a voltage synthesis tuning (VST) system with on-screen display (OSD) of the relevant control functions. Sound and colour are controlled by the 5 on-chip digital to analog converters. This system is colour standard independent and can be used all over the world.

It supports the following teletext decoders :

- A highly integrated one chip text, using SAA5254 for one page teletext or using SAA5281 for four page teletext.
- With two IC's, like SAA5246 and 8K SRAM for 4 pages teletext.

B - Short specification of PCA84C641 / CTV322S

Tuning :
- Voltage synthesis tuning system via a 14 bits digital to analog converter.
- Automatic search tuning based on analog AFC signal and on IDENT (video recognition) signal.
- Tuning in up to 3 different bands.
- Manual search tuning.
- Direct program number entry.
- One and two digit program number entry.
- Step program up and down.
- Last-tuned program registration, and swap function.
- Silent tuning.
- Dark program switching.
- Automatic following per program.

Control :
- Up to 28 local control commands
- Remote Control according the RC-5 world standard.

Display : Off-screen LED display of Standby mode.

On-screen display of :
- Remote control command reception.
- One or two digit program number entry.
- Program sound status line.
- Selected tuner band VHF-1, VHF-3, UHF.
- Analog tuning bar in search mode and manual/fine tuning.
- Selected external source.
- Store and clear program mode.
- Sound mute.
- Recall analog control, store and clear (hard preset) mode.
- Analog control mode: volume, brightness, colour, contrast.
- Analog control status bars.
- Selected sleep timer.

Sound :
- Volume control in 64 steps (8 steps/second).
- Mute control function.
- Automatic sound muting during tuning or program switching.

Video :
- Control of brightness, colour, contrast in 64 steps (8 steps/second).
- Additional three button control possibility for all analog colour and sound controls.

Peri - TV : - Full peripheral TV plug signal switching; CVBS out CVBS/RGB in,sound in and out.

Memory :
- Storage of preferred analog picture and sound control settings.
- Storage of 90 preferred programs.
- Storage of 14 bit tuning DAC value, band select, system standard, dual language selection, following enable and VTR time constant control bits for each program.

Power-on : - Mains switch sense input to check whether TV has to be switched-on or to standby mode.
- The program provides a fixed delay of 1.2 seconds and screen blanking of about 100 msec to allow the switchmode power-supply to stabilize.
- After power-on reset of the microcontroller and first time switching-on of the set, the system tunes to program 1 and recalls analog picture and sound control presets from non-volatile memory. If program 1 is "cleared", the system tunes to the first "stored" program. If all programs are "cleared" the program number is forced to 1.

Standby : - Sleep timer selection of 15, 30, 45... up to 120 minutes.
- Automatic switching to standby mode when the system is in front-end mode and during the last 5 minutes no valid input signal is received or no valid remote or local control command is detected. (All complete received commands with system address 00, except the "RC-5 enlarged" commands, will restart the 5 minute timer. All these commands will also result in an OSD message.)

Production Service Mode :
- CTV322S has been provided with a special Production Service Mode which disables the automatic switch off after 5 minutes if no IDENT is available. This mode can be activated using RC-5 command 0 with system address 7. Program numbers and 'AV' will appear in green in stead of yellow. The other TV functions act as normal. This particular mode is implemented for factory burn-in tests.

Teletext : Either : a 1 page teletext control system by means of SAA5254. All normal teletext functions are available. A special signal for de-interlace purposes is available on a signal output pin.
- Or : a 4 page teletext control system by means of SAA5281. All normal teletext function are available. A spe cial signal for de. Interlace purposes is available on a signal output pin.
- Or : a 4 page teletext control system with SAA5246. All normal teletext functions are available. Also here a special signal for de-interlace purposes is available on a single output pin.

The software is written for the PCA84C641, but is also applicable without any change for the PCA84C640.

C. PCA84C641 PIN DESCRIPTION

Many pins, used by CTV322S as an output, also have an input function to define hardware configuration in which it is working. The input function can be used to inform the microcontroller if a certain option is available. Therefore the microcontroller tests these pins directly after cold start, reset and detects if such a pin is connected to ground, or with an option diode to the mode strobe pin MDSTR, or if there is no input connection at all. In general the option number correspond to the pin number, except for those options that are tested via the I²C-bus. The meaning of these options are therefore given in the chapter describing the corresponding pins. The pinning of the PCA84C641 is given below.

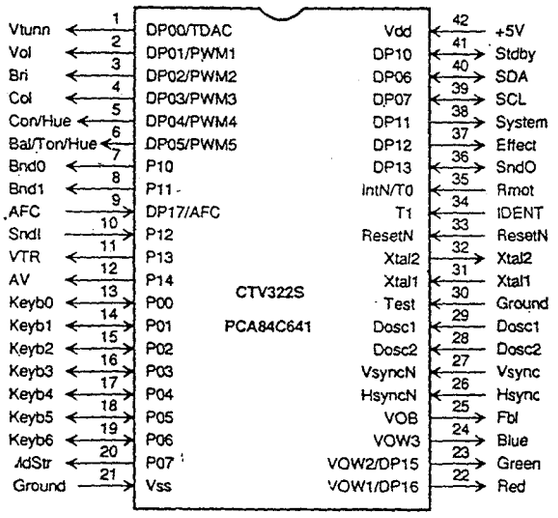


Fig.6 Pinning diagram of PCA84C641 microcontroller in CTV322S.

The following port options are set for the PCA84C641 :
P10..P17, P00..P07, DP..10..DP13, and DP17 = standard port (port option I)
DP06 and DP07 = open drain port (port option II)
DP00..DP05, DP15 and DP16 = push-pull output (port option III)

1	TDAC	VTUNN	tuning voltage control output
2	PWM1	VOL	volume control output
3	PWM2	BRI	brightness control output
4	PWM3	COL	color control output
5	PWM4	CON/HUE	contrast or hue control output
6	PWM5	TON/ BAL/	tone, balance or hue control output
7	P 10 1,2)	BND-0	band - switch 0 output
8	P 11 1,2)	BND-1	band - switch 1 output
9	AFC	AFC	analog AFC sence input
10	P 12	SNDI	Dual/Non Dual language sound input
11	P 13 1)	VTR	VTR time constant control output
12	P 14 1)	AV	ext./int. audio/video source control output
13	P 00 1)	KEYB 0	keyboard scan line input/output
14	P 01 1)	KEYB 1	keyboard scan line input/output
15	P 02 1)	KEYB 2	keyboard scan line input/output
16	P 03 1)	KEYB 3	keyboard scan line input/output
17	P 04 1)	KEYB 4	keyboard scan line input/output
18	P 05 1)	KEYB 5	keyboard scan line input/output
19	P 06 1)	KEYB 6	keyboard scan line input/output
20	P 07	MDSTR	system mode strobe output
21	Vss	GROUND	ground supply input
22	VOW1	RED	OSD red output
23	VOW2	GREEN	OSD green output
24	VOW3	BLUE	OSD blue output
25	VOB	FBL	OSD fast blanking output
26	HSYNCN	HSYNC	horizontal synchronization input
27	VSYNCN	VSYNC	vertical synchronization input
28	DOSC2	DOSC2	connection to LC oscillator of DOS clock
29	DOSC1	DOSC1	connection to LC oscillator of DOS clock
30	TEST		test input; connected to ground
31	XTAL 1		oscillator input; 10 MHz crystal
32	XTAL 2		oscillator output
33	RESETN		power - on reset input/output
34	T1	IDENT	horizontal coincidence input
35	INTN /TO	RMOT	RC-5 remote control input
36	DP 13 1)	SNDO	mono/stereo or language 1/2 output
37	DP 12 1)	EFFECT	Sound effect control output
38	DP 11 1)	SYSTEM	system select output
39	DP 07	SCL	I^2C - bus clock signal output
40	DP 06	SDA	I^2C - bus data signal output
41	DP 10 2)	STDBY	Standby / On control input/output
42	Vdd		+5V supply voltage input

note :
1) These pins are read at "cold start", they define the configuration/options of the TV-system controlled by CTV322S.
2) These pins can command a solenoid to switch-off AC-mains supply.

Fig. 7 Pin description of PCA84C641 micro controller in CTV322S.

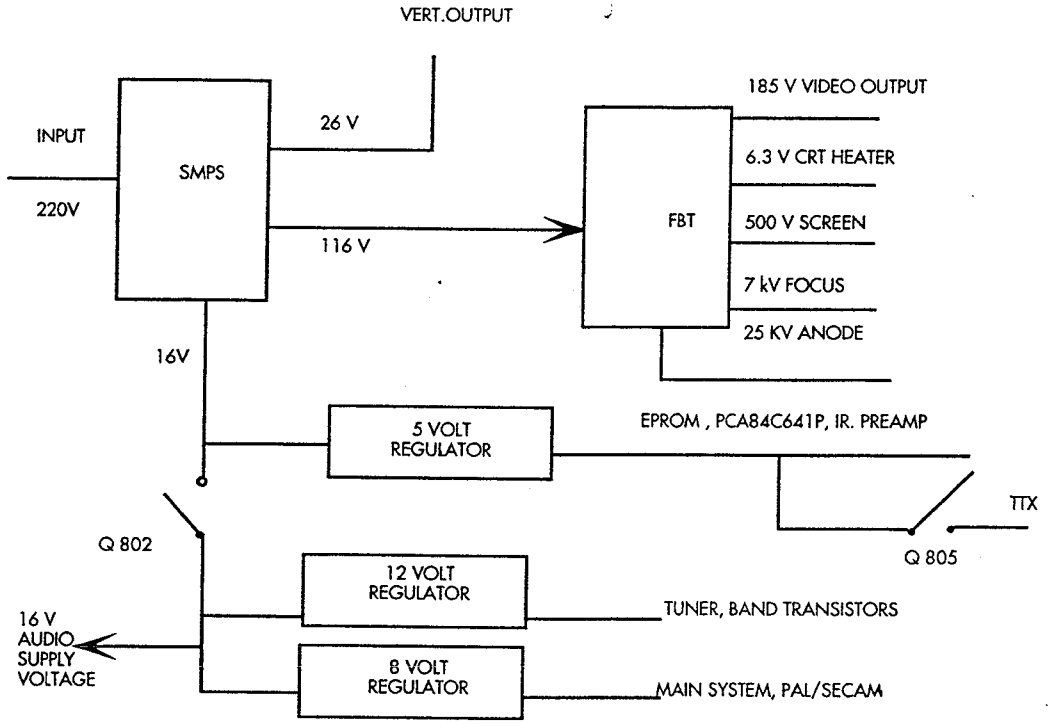


Fig. 8 - Block Diagram Of Power Supply Stage

B- Features of the TDA 4601

- Direct drive of a bipolar transistor with a base current up to 1.5 A
- Power supply for the control circuitry out of the flyback transformer - no extra transformer required
- Overload and Short circuit proof (Fold-back behaviour)
- Efficiency up to over 80 %
- Mains separation.
- Reference voltage independent of temperatures between 0 and 70 ° C
- Duty cycle between 1:2 and 1:20

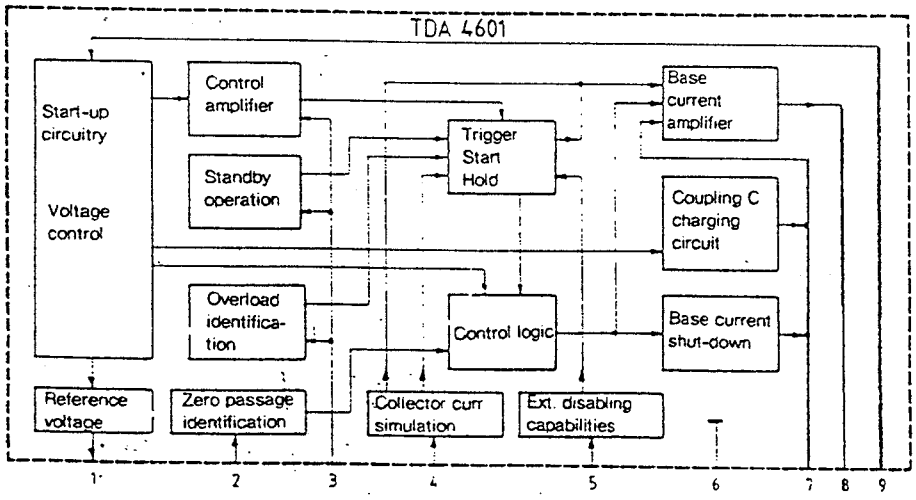


Fig. 9 - TDA4601 Block Diagram

CHROMA, VIDEO, IF, SOUND AND DEFLECTION SECTION

A- General description of TDA8362

TDA8362 accepts IF signals which come from SAW filter or CVBS signals which come from external sources and can generate video, audio signals, vertical, horizantal driver signals and R,G,B outputs.

B- Features of TDA8362

i- Multi standard VIF (Positive or negative modulation)
ii- Multi standard FM sound demodulator (5.5 or 6.5 MHz).
iii- Video or audio internal/external switching.
iv- Integrated chroma trap and band pass filters.
v- Integrated luminance delay line.
vi- PAL decoding
vii- Low dissipation (600 mW)
viii- Single alignment (only VIF demodulator)
ix- Accepts external RGB, video and audio.

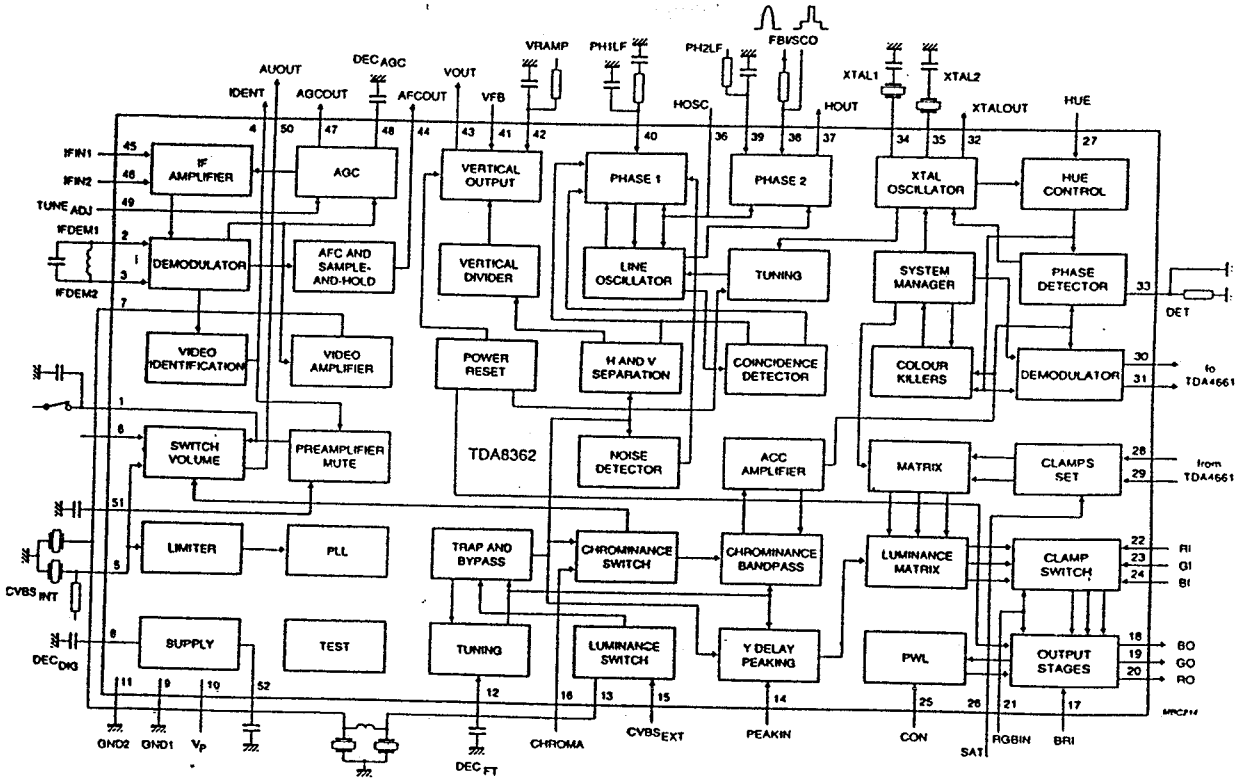


Fig. 10 - Block Diagram TDA8362

C - Pin Description of TDA8362

No	Function	No	Function
1	Audio deemphasis	27	Hue control input (or chroma out)
2	IF- demodulator tuned circuit	28	B-Y input signal
3	IF- demodulator tuned circuit	29	R-Y input signal
4	Video indentification output	30	R-Y output signal
5	Sound IF in plus volume control	31	B-Y output signal
6	External audio input	32	4.43 MHz output for TDA 8395
7	IF video output	33	Loop filter burst phase detector
8	Decoupling digital supply	34	3.58 MHz X-tal connection
9	Ground	35	4.43 MHz X-tal connection
10	Positive supply (8 V)	36	Start horizontal oscillator
11	Ground	37	Horizontal output
12	Decoupling filter tuning	38	Flyback input/sandcastle output
13	Internal CVBS input	39	Ø - 2 loop filter
14	Peaking control input	40	Ø - 1 loop filter
15	External CVBS input	41	Vertical feedback input
16	Chroma + A/V switch input	42	Vertical ramp generator
17	Brightness control input	43	Vertical output
18	B - output	44	AFC output
19	G - output	45	IF-AFC output
20	R - output	46	IF-input
21	RGB- insertion and blanking input	47	Tuner AGC output
22	R - input for insertion	48	AGC decoupling capacitor
23	G - input for insertion	49	Tuner take-over adjustment
24	B - input for insertion	50	Audio output
25	Contrast control input	51	Decoupling sound demodulator
26	Saturation control input	52	Decoupling bandgap supply

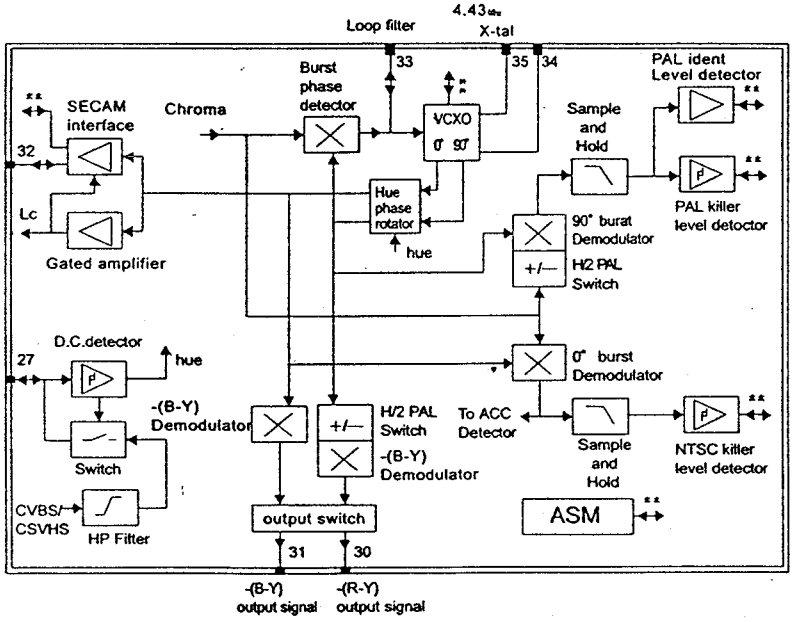


Fig. 11 - Block Diagram of Color Decoder

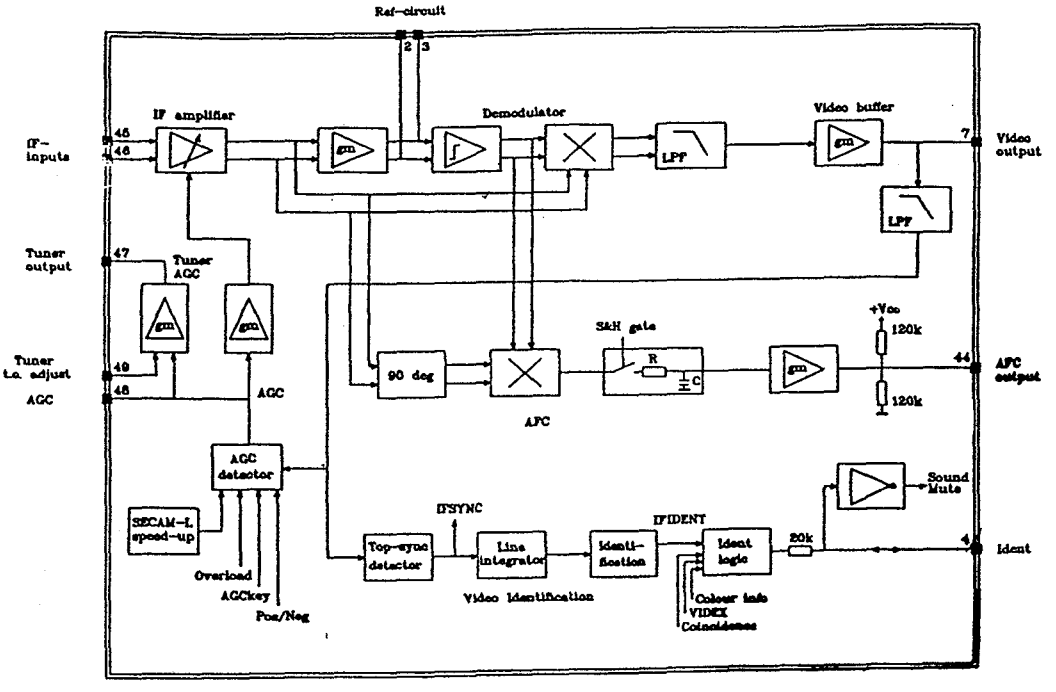


Fig. 12 - Block Diagram of Vision IF

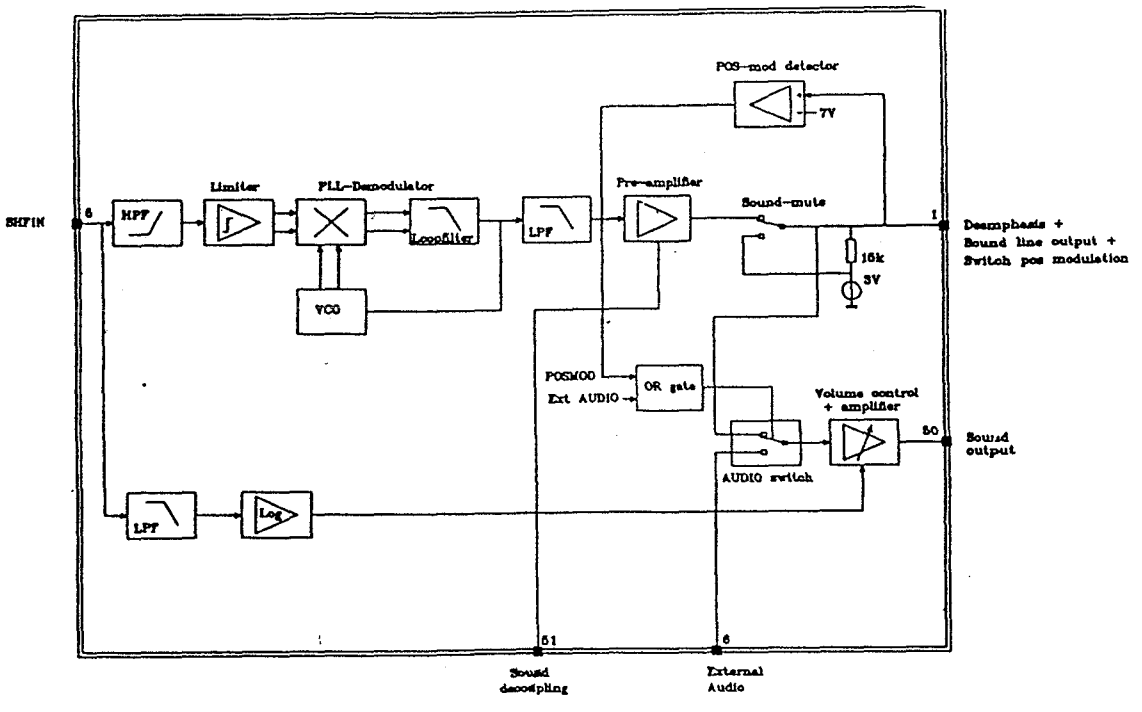


Fig. 13 - Block Diagram of Sound

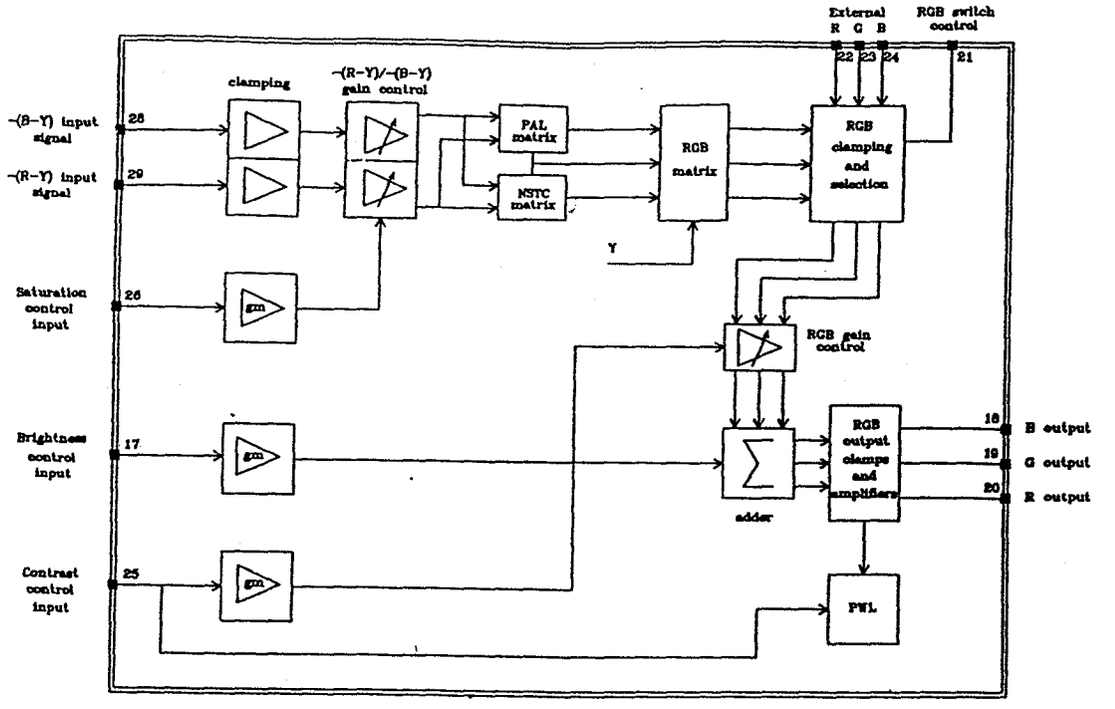


Fig. 14 - Block Diagram of RGB Output and Input Circuit

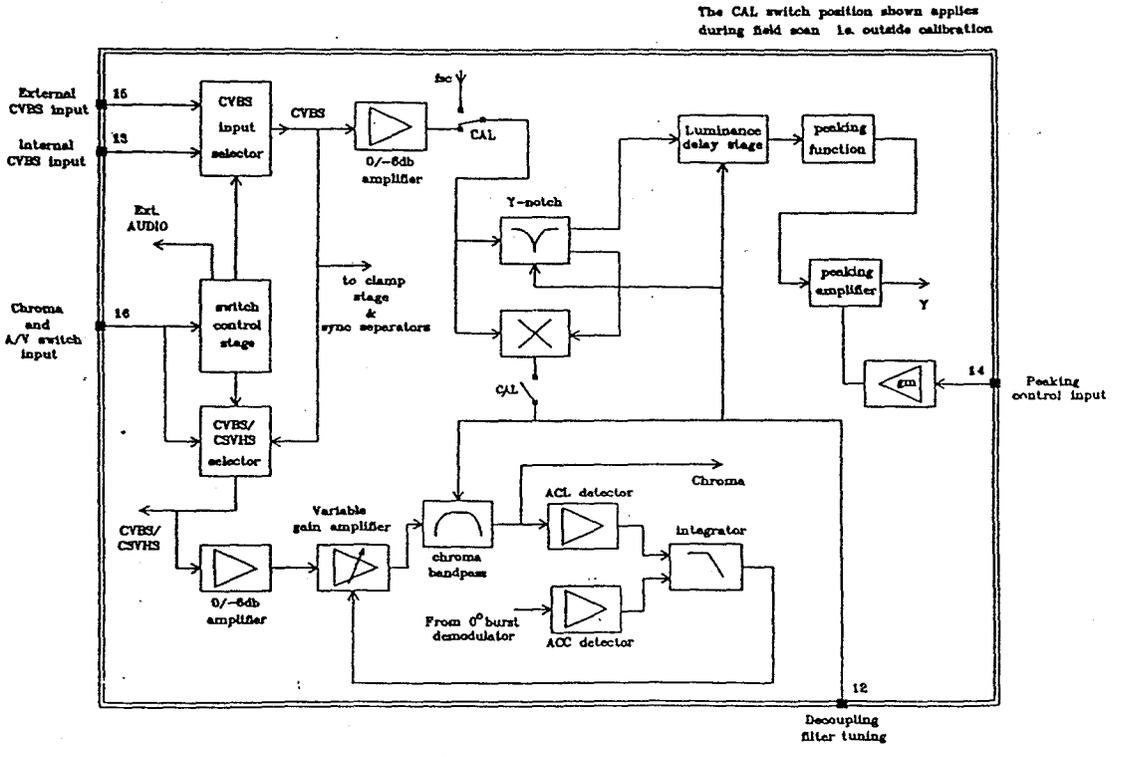


Fig. 15 - Block Diagram of Filters and Switches

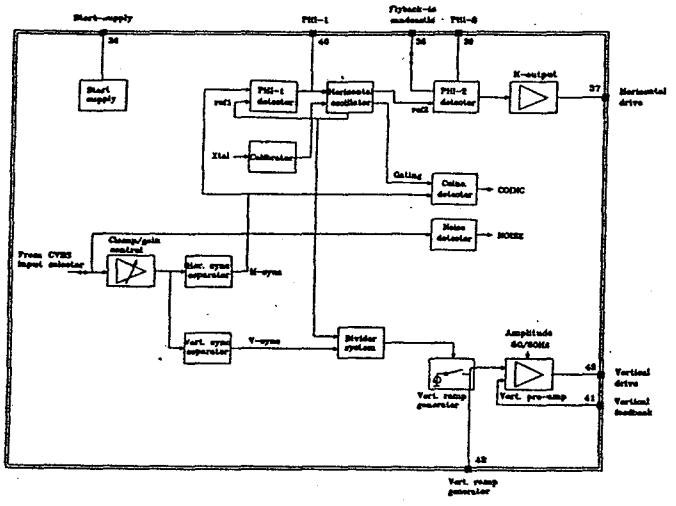


Fig. 16 - Block Diagram of Horizontal and Vertical Synchronization

D- Secam Decoder (TDA8395)

The TDA8395 is an alignment free SECAM Color Decoder and can be used conjuction with the TDA8362. It consists of cloche Filter, Demodulator and Identification circuit. This application needs very few external components.

E- Pin Descriptions of TDA8395 :

No	SYMBOL	Function
1	f_{ref}/IDENT	reference frequency input/ identification input
2	TEST	test output
3	Vp	positive supply voltage
4	n.c.	not connected
5	n.c.	not connected
6	GND	ground
7	CLOCHEref	Cloche reference filter
8	PLLref	PLL reference
9	- (R-Y)	- (R-y) output
10	- (B-Y)	- (B-y) output
11	n.c.	not connected
12	n.c.	not connected
13	n.c.	not connected
14	n.c.	not connected
15	SAND	sandcastle pulse input
16	CVBS	video (chrominance) input

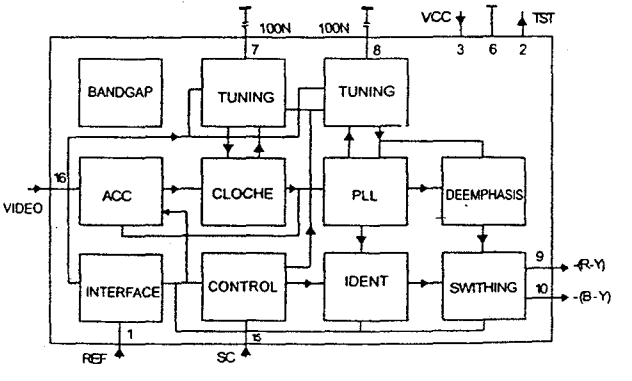


Fig. 17 Block Diagram of TDA8395

F- Baseband Delay Line (TDA4661)

The TDA4661 is a baseband delay lines of 64 usec for TV. It contains two parts. One of them consists of two comb filters with a delay time of 64 usec in switched capacitor technique. Other is internal clock of 3 MHz, line locked via the sandcastle pulse.

G- Pin Descriptions of TDA4661

No	Symbol	Function	No		Function
1	Vp2	+8V Supply Voltage for analog part	9	Vp1	+8VSupply Voltage for analog part
2	n.c.	not connected	10	GND1	ground for analog part (0V)
3	GND2	ground for digital part (0V)	11	Vo (R-Y)	(R-Y)output signal
4	i.c.	internally con-nected	12	Vo (B-Y)	(B-Y)output signal
5	SAND	Sandcastle pulse input	13	n.c.	not connected
6	n.c.	not connected	14	Vi (B-Y)	(B-Y)input signal
7	i.c.	internally con-nected	15	n.c.	not connected
8	i.c.	internally con-nected	16	Vi (R-Y)	(R-Y)input signal

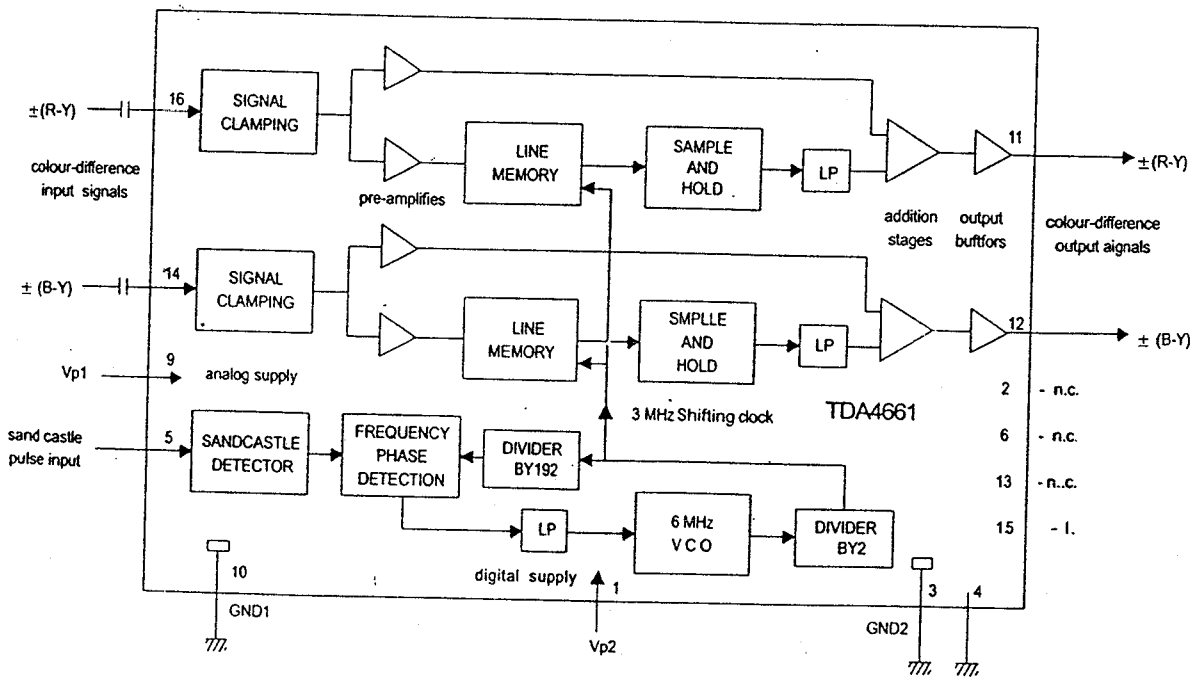


Fig. 18- Block Diagram of TDA4661

H- Vertical Deflection Circuit (TDA3653B)

The TDA3653 B is a vertical output circuit for drive of various deflection systems with currents up to 1.5 A. peak to peak.

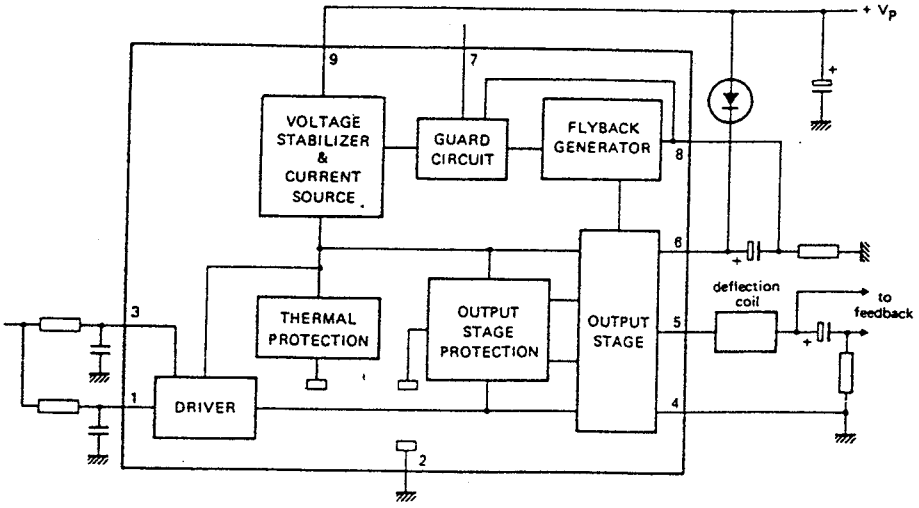


Fig. 19 - Block Diagram of TDA3653B

I - Audio Amplifier (TDA 7056A)

5 W Audio Amplifier. It has short circuit protection. It needs no external components.

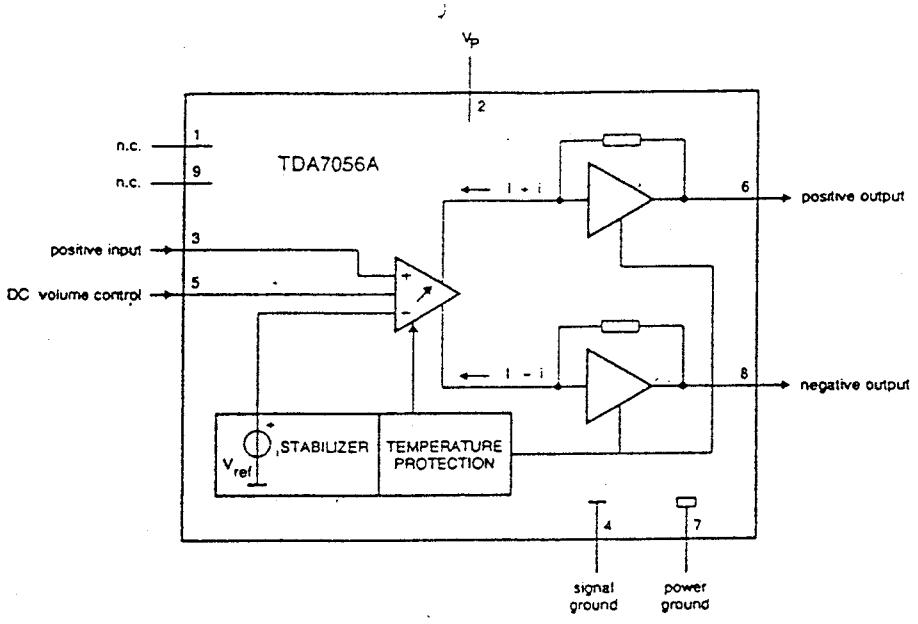
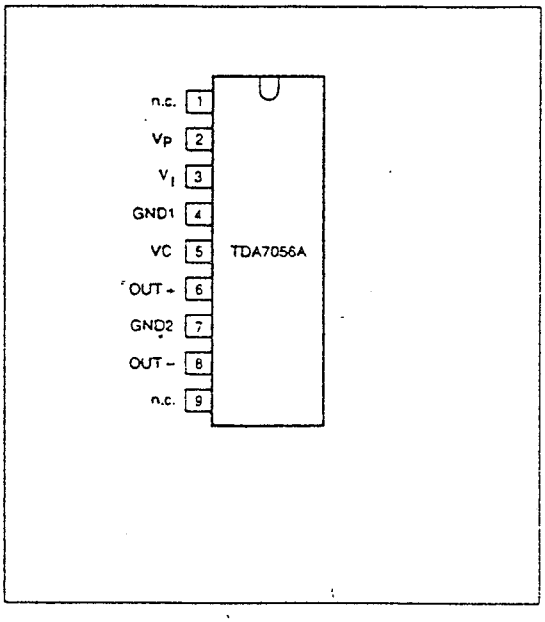


Fig. 21 - Block Diagram of TDA7056A

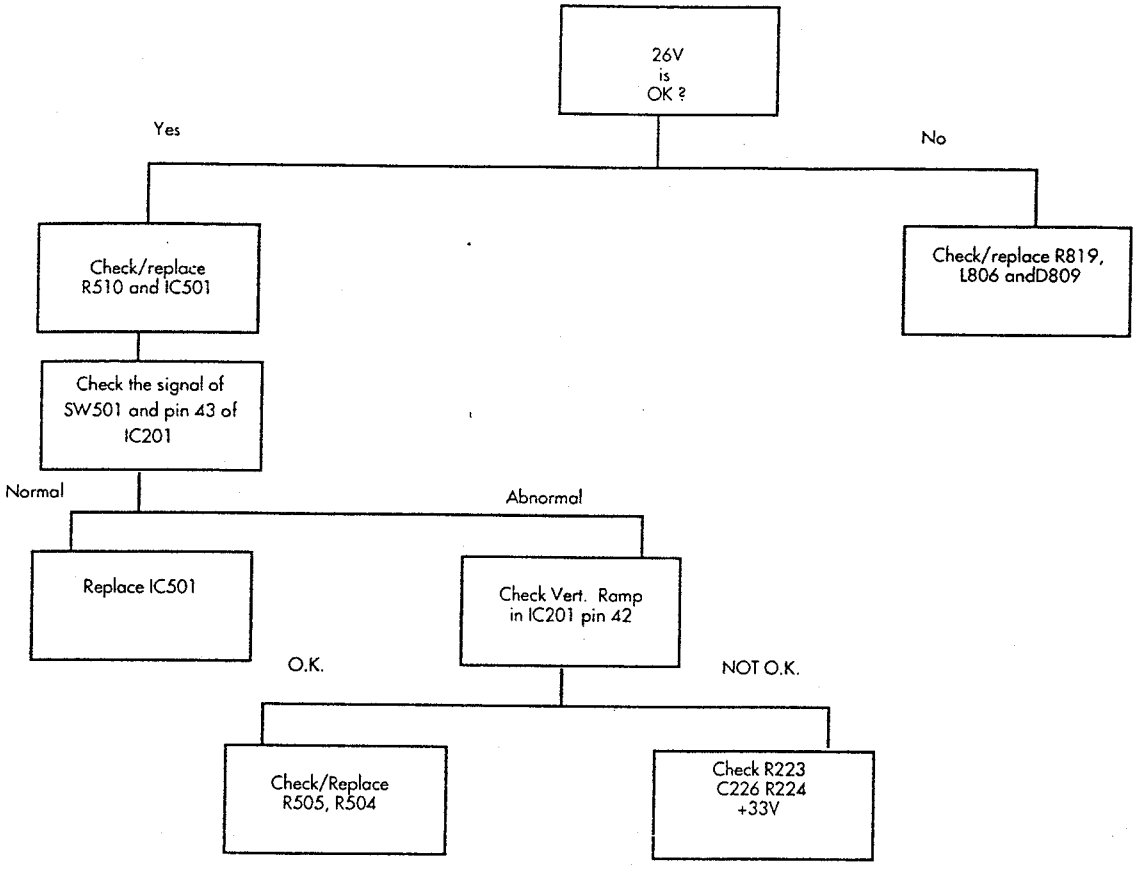


PINNING

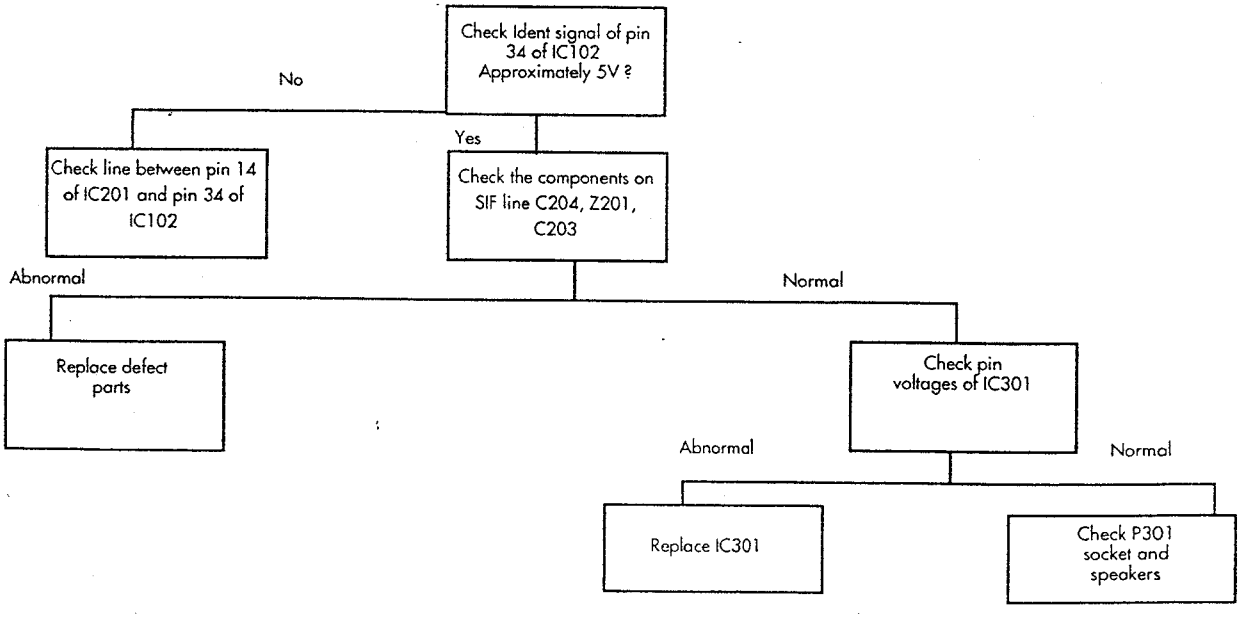
SYMBOL	PIN	DESCRIPTION
n.c.	1	not connected
V_p	2	positive supply voltage
V_I	3	voltage input
GND1	4	signal ground
VC	5	DC volume control
OUT+	6	positive output
GND2	7	power ground
OUT-	8	negative output
n.c.	9	not connected

Fig. 22 - Pin Configuration of TDA7056A

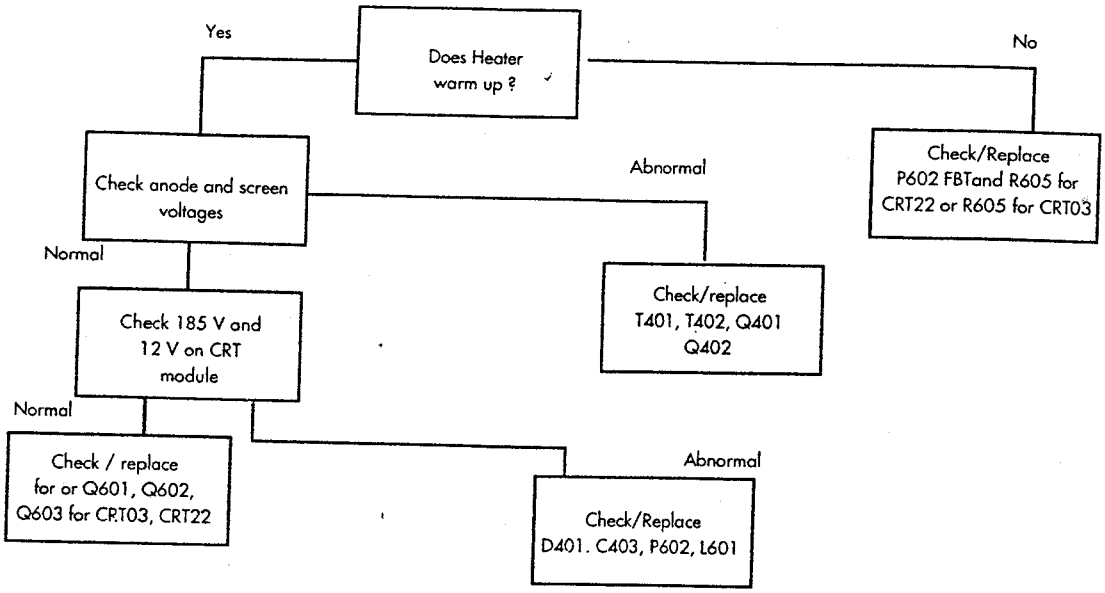
NO VERTICAL (SINGLE LINE)



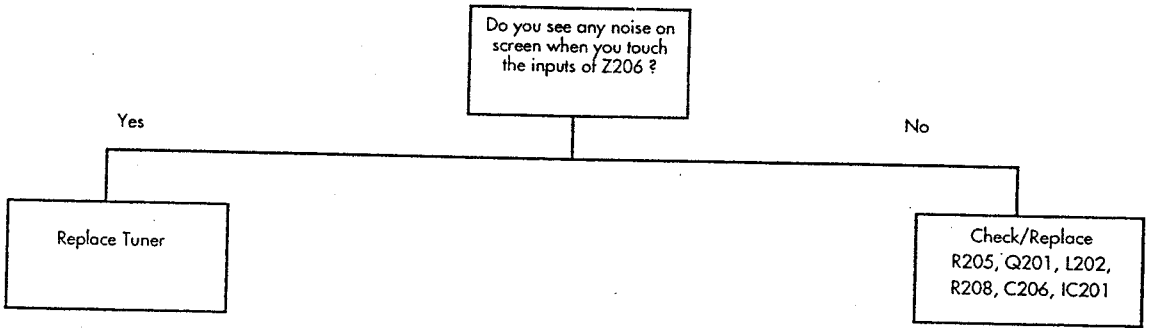
NO SOUND (PICTURE OK)


Check Ident signal of pin 34 of IC102 Approximately 5V ?
No
Yes
Check line between pin 14 of IC201 and pin 34 of IC102
Check the components on SIF line C204, Z201, C203
Abnormal
Normal
Replace defect parts
Check pin voltages of IC301
Abnormal
Normal
Replace IC301
Check P301 socket and speakers

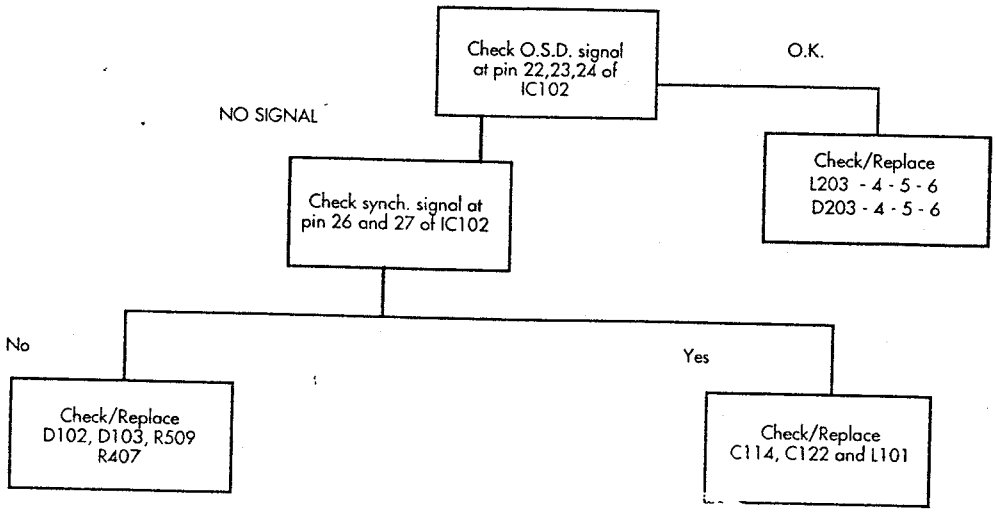
NO RASTER (SOUND OK)


Does Heater warm up ?
Yes
No
Check anode and screen voltages
Abnormal
Check/Replace P602 FBTand R605 for CRT22 or R605 for CRT03
Normal
Check/replace T401, T402, Q401 Q402
Check 185 V and 12 V on CRT module
Normal
Abnormal
Check / replace for or Q601, Q602, Q603 for CRT03, CRT22
Check/Replace D401. C403, P602, L601

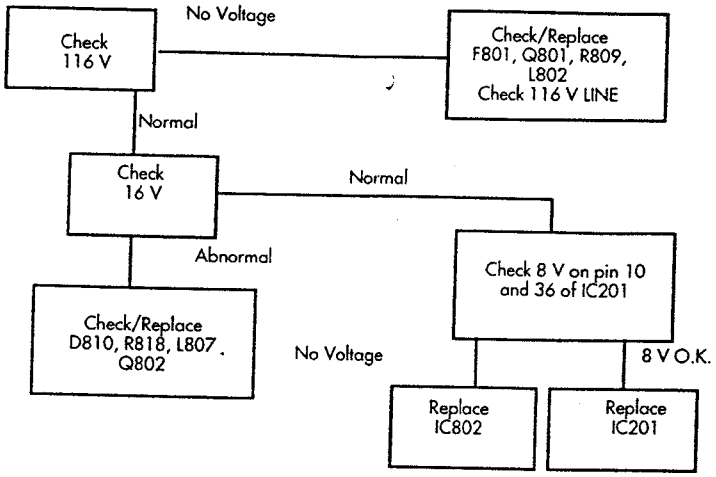
NO SOUND AND PICTURE (FULLY WHITE SCREEN, NO SNOWING)


Do you see any noise on screen when you touch the inputs of Z206 ?
Yes
No
Replace Tuner
Check/Replace R205, Q201, L202, R208, C206, IC201

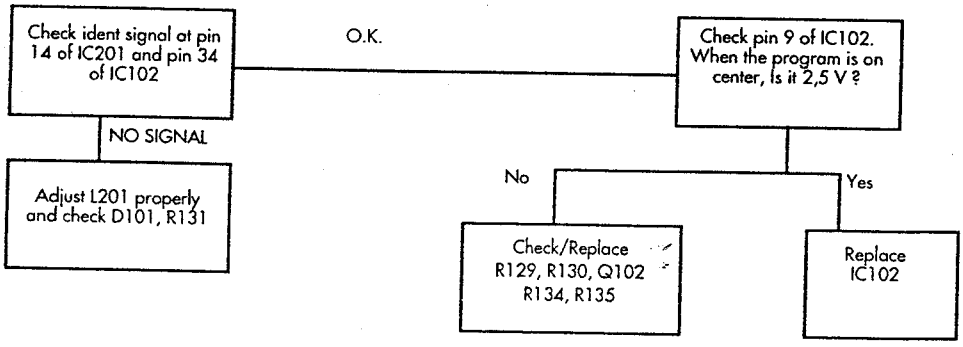
NO O.S.D.


Check O.S.D. signal at pin 22,23,24 of IC102
O.K.
NO SIGNAL
Check/Replace L203 - 4 - 5 - 6 D203 - 4 - 5 - 6
Check synch. signal at pin 26 and 27 of IC102
No
Yes
Check/Replace D102, D103, R509 R407
Check/Replace C114, C122 and L101

NO RASTER AND SOUND



NOT LOCKED DURING AUTOMATIC SEARCHING



PART LIST
Important Safety Notice

When replacing any of these components, use only manufacturer's specified parts.

ABBREVIATIONS :

CC	: C - CERAMIC	RC	: R - SOLID
CE	: C - ELECTROLYTIC	RD	: R - CARBON
C - MKT	: C - M. POLYESTER	RF	: R - FUSIBLE
C - KT	: C - POLYESTER	RM	: R - METAL FILM
C - KP	: C - POLYPROPYLENE	RP	: R - WIRE WOUND
C - MKP	: C - M.POLYPROPYLENE	RS	: R - METAL, OXIDE

POSITION	CODE NO	DESCRIPTION
MAIN PCB ASS'Y		
MAIN PCB		
	34001 - 0021	P943 MAIN PCB
RESISTORS		
R206	33111 - 470J	RD 1/8 W 47 - J
R403	33111 - 470J	RD 1/8 W 47 - J
R127	33111 - 470J	RD 1/8 W 47 - J
R722	33111 - 750J	RD 1/8 W 75 - J
R723	33111 - 750J	RD 1/8 W 75 - J
R724	33111 - 750J	RD 1/8 W 75 - J
R725	33111 - 750J	RD 1/8 W 75 - J
R708	33111 - 750J	RD 1/8 W 75 - J
R726	33111 - 750J	RD 1/8 W 75 - J
R210	33111 - 101J	RD 1/8 W 100 - J
R211	33111 - 101J	RD 1/8 W 100 - J
R212	33111 - 101J	RD 1/8 W 100 - J
R218	33111 - 101J	RD 1/8 W 100 - J
R123	33111 - 101J	RD 1/8 W 100 - J
R124	33111 - 101J	RD 1/8 W 100 - J
R701	33111 - 121J	RD 1/8 W 120 - J
R233	33111 - 151J	RD 1/8 W 150 - J
R207	33111 - 181J	RD 1/8 W 180 - J
R221	33111 - 221J	RD 1/8 W 220 - J
R808	33111 - 221J	RD 1/8 W 220 - J
R703	33111 - 271J	RD 1/8 W 270 - J
R113	33111 - 331J	RD 1/8 W 330 - J
R201	33111 - 391J	RD 1/8 W 390 - J
R508	33111 - 471J	RD 1/8 W 470 - J
R827	33111 - 471J	RD 1/8 W 470 - J
R825	33111 - 471J	RD 1/8 W 470 - J
R721	33111 - 471J	RD 1/8 W 470 - J
R718	33111 - 751J	RD 1/8 W 750 - J
R130	33111 - 821J	RD 1/8 W 820 - J
R511	33111 - 102J	RD 1/8 W 1K - J
R203	33111 - 102J	RD 1/8 W 1K - J
R811	33111 - 122J	RD 1/8 W 1K2 - J
R109	33111 - 152J	RD 1/8 W 1K5 - J
R716	33111 - 182J	RD 1/8 W 1K8 - J
R231	33111 - 222J	RD 1/8 W 2K2 - J
R129	33111 - 272J	RD 1/8 W 2K7 - J
R122	33111 - 332J	RD 1/8 W 3K3 - J
R121	33111 - 332J	RD 1/8 W 3K3 - J
R502	33111 - 392J	RD 1/8 W 3K9 - J
R822	33111 - 472J	RD 1/8 W 4K7 - J
R401	33111 - 472J	RD 1/8 W 4K7 - J
R824	33111 - 472J	RD 1/8 W 4K7 - J
R108	33111 - 562J	RD 1/8 W 5K6 - J
R202	33111 - 682J	RD 1/8 W 6K8 - J
R111	33111 - 682J	RD 1/8 W 6K8 - J
R234	33111 - 682J	RD 1/8 W 6K8 - J
R209	33111 - 822J	RD 1/8 W 8K2 - J
R120	33111 - 822J	RD 1/8 W 8K2 - J
R501	33111 - 103J	RD 1/8 W 10K - J
R506	33111 - 103J	RD 1/8 W 10K - J
R115	33111 - 103J	RD 1/8 W 10K - J
R717	33111 - 103J	RD 1/8 W 10K - J
R719	33111 - 103J	RD 1/8 W 10K - J
R125	33111 - 103J	RD 1/8 W 10K - J
R106	33111 - 103J	RD 1/8 W 10K - J
R715	33111 - 103J	RD 1/8 W 10K - J

POSITION	CODE NO	DESCRIPTION
R812	33111 - 133J	RD 1/8 W 13K - J
R136	33111 - 183J	RD 1/8 W 18K - J
R114	33111 - 183J	RD 1/8 W 18K - J
R215	33111 - 223J	RD 1/8 W 22K - J
R826	33111 - 223J	RD 1/8 W 22K - J
R504	33111 - 223J	RD 1/8 W 22K - J
R126	33111 - 273J	RD 1/8 W 27K - J
R828	33111 - 273J	RD 1/8 W 27K - J
R409	33111 - 273J	RD 1/8 W 27K - J
R720	33111 - 473J	RD 1/8 W 47K - J
R110	33111 - 473J	RD 1/8 W 47K - J
R128	33111 - 473J	RD 1/8 W 47K - J
R410	33111 - 473J	RD 1/8 W 47K - J
R217	33111 - 473J	RD 1/8 W 47K - J
R216	33111 - 104J	RD 1/8 W 100K - J
R131	33111 - 104J	RD 1/8 W 100K - J
R714	33111 - 104J	RD 1/8 W 100K - J
R134	33111 - 104J	RD 1/8 W 100K - J
R135	33111 - 104J	RD 1/8 W 100K - J
R710	33111 - 474J	RD 1/8 W 470K - J
R219	33111 - 824J	RD 1/8 W 820K - J
R224	33111 - 335J	RD 1/8 W 3.3M - J
R819	33113 - 2R7J	RD 1/4 W 2.7R - J
R815	33113 - 270J	RD 1/4 W 27R - J
R809	33113 - 101J	RD 1/4 W 100 - J
R404	33113 - 561J	RD 1/4 W 560 - J
R204	33113 - 102J	RD 1/4 W 1K - J
R230	33113 - 102J	RD 1/4 W 1K - J
R302	33113 - 102J	RD 1/4 W 1K - J
R402	33113 - 102J	RD 1/4 W 1K - J
R213	33113 - 122J	RD 1/4 W 1.2K - J
R301	33113 - 222J	RD 1/4 W 2.2K - J
R222	33113 - 562J	RD 1/4 W 5.6K - J
R112	33113 - 682J	RD 1/4 W 6.8K - J
R101	33113 - 103J	RD 1/4 W 10K - J
R102	33113 - 103J	RD 1/4 W 10K - J
R103	33113 - 103J	RD 1/4 W 10K - J
R104	33113 - 103J	RD 1/4 W 10K - J
R118	33113 - 103J	RD 1/4 W 10K - J
R214	33113 - 103J	RD 1/4 W 10K - J
R813	33113 - 103J	RD 1/4 W 10K - J
R107	33113 - 123J	RD 1/4 W 12K - J
R220	33113 - 123J	RD 1/4 W 12K - J
R407	33113 - 153J	RD 1/4 W 15K - J
R116	33113 - 223J	RD 1/4 W 22K - J
R704	33113 - 273J	RD 1/4 W 27K - J
R705	33113 - 273J	RD 1/4 W 27K - J
R509	33113 - 473J	RD 1/4 W 47K - J
R505	33113 - 823J	RD 1/4 W 82K - J
R105	33113 - 104J	RD 1/4 W 100K - J
R807	33113 - 104J	RD 1/4 W 100K - J
R133	33113 - 184J	RD 1/4 W 180K - J
R132	33113 - 224J	RD 1/4 W 220K - J
R223	33113 - 334J	RD 1/4 W 330K - J
R805	33113 - 824J	RD 1/4 W 820K - J
R507	33114 - 1R8J	RD 1/2 W 1.8R - J
R303	33114 - 2R2J	RD 1/2 W 2.2R - J
R510	33114 - 4R7J	RD 1/2 W 4.7R - J
R503	33114 - 271J	RD 1/2 W 270 - J
R408	33114 - 334J	RD 1/2 W 330K - J
R820	33154 - 475J	RC 1/2 W 4.7M - J
R814	33135 - 470J	RS 1 W 47-J
R406	33135 - 222J	RS 1 W 2.2K-J

POSITION	CODE NO	DESCRIPTION
R803	33135 - 272J	RS 1 W 2.7K - J
R816	33136 - 221J	RS 2 W 220 - J
R823	33136 - 271J	RS 2 W 270 - J
R405	33136 - 103J	RS 2 W 10K - J
R817	33136 - 153J	RS 2 W 15K - J
R810	33136 - 274J	RS 2 W 270K - J
R818	33144 - R47J	RF 1/2 W 0.47 - J
R802	33169 - 2R2K	RP 5 W 2.2R - K
R208	33123 - 111J	RM 1/4 W 110K - J
R205	33123 - 102J	RM 1/4 W 1K - J
R806	33123 - R68J	RM 1/4 W 0.68 - J
CAPACITORS		
C202	32113 - 120JC	CC 50V CH 12p - J
C220	32113 - 180JC	CC 50V CH 18p - J
C114	32113 - 180JC	CC 50V CH 18p - J
C122	32113 - 180JC	CC 50V CH 18p - J
C204	32113 - 680JSL	CC 50V SL 68p - J
C107	32113 - 101JC	CC 50V CH 100p - J
C811	32113 - 101KSL	CC 50V SL 100p - K
C816	32117 - 221KSL	CC 500V SL 220p - K
C225	32113 - 471K2B	CC 50V B 470p - K
C817	32117 - 471K2B	CC 500V B 470p - K
C818	32117 - 471K2B	CC 500V B 470p - K
C203	32113 - 102K2B	CC 50V B 1n - K
C216	32113 - 102K2B	CC 50V B 1n - K
C217	32113 - 102K2B	CC 50V B 1n - K
C504	32113 - 102K2B	CC 50V B 1n - K
C829	32113 - 102K2B	CC 50V B 1n - K
C707	32113 - 102K2B	CC 50V B 1n - K
C712	32113 - 102K2B	CC 50V B 1n - K
C706	32113 - 102K2B	CC 50V B 1n - K
C222	32113 - 222K2B	CC 50V B 2n2 - K
C106	32113 - 222K2B	CC 50V B 2n2 - K
C401	32117 - 222K2B	CC 500V B 2n2 - K
C801	32119 - 222K2B	CC 1KV B 2n2 - K
C802	32119 - 222K2B	CC 1KV B 2n2 - K
C803	32119 - 222K2B	CC 1KV B 2n2 - K
C804	32119 - 222K2B	CC 1KV B 2n2 - K
C201	32113 - 332K2B	CC 50V B 3n3 - K
C218	32113 - 472K2B	CC 50V B 4n7 - K
C502	32113 - 472K2B	CC 50V B 4n7 - K
C223	32113 - 472K2B	CC 50V B 4n7 - K
C708	32113 - 472K2B	CC 50V B 4n7 - K
C709	32113 - 472K2B	CC 50V B 4n7 - K
C239	32113 - 103KSL	CC 50V SL 10n - K
C711	32113 - 103KSL	CC 50V SL 10n - K
C209	32113 - 223M2F	CC 50V F 22n - M
C111	32113 - 223M2F	CC 50V F 22n - M
C227	32113 - 223M2F	CC 50V F 22n - M
C231	32113 - 223M2F	CC 50V F 22n - M
C233	32113 - 223M2F	CC 50V F 22n - M
C234	32113 - 223M2F	CC 50V F 22n - M
C211	32113 - 223M2F	CC 50V F 22n - M
C303	32113 - 223M2F	CC 50V F 22n - M
C110	32113 - 223M2F	CC 50V F 22n - M
C109	32113 - 223M2F	CC 50V F 22n - M
C116	32113 - 223M2F	CC 50V F 22n - M
C119	32113 - 473Z2F	CC 50V F 47n - Z
C120	32113 - 104M2F	CC 50V F 100n - M
C101	32113 - 104M2F	CC 50V F 100n - M
C108	32113 - 104M2F	CC 50V F 100n - M
C112	32113 - 104M2F	CC 50V F 100n - M
C304	32113 - 104M2F	CC 50V F 100n - M
C822	32117 - 392M	CC 400V AC 3n9 - M
C501	32233 - 103K	C MKT 63V 10n - K
C206	32233 - 473K	C MKT 63V 47n - K
C405	32233 - 473K	C MKT 63V 47n - K
C705	32233 - 473K	C MKT 63V 47n - K
C207	32233 - 104K	C MKT 63V 100n - K
C704	32233 - 104K	C MKT 63V 100n - K
C214	32233 - 104K	C MKT 63V 100n - K
C215	32233 - 104K	C MKT 63V 100n - K
C219	32233 - 104K	C MKT 63V 100n - K
C226	32233 - 104K	C MKT 63V 100n - K
C229	32233 - 104K	C MKT 63V 100n - K
C236	32233 - 104K	C MKT 63V 100n - K
C703	32233 - 104K	C MKT 63V 100n - K
C505	32233 - 104K	C MKT 63V 100n - K

POSITION	CODE NO	DESCRIPTION
C702	32233 - 104K	C MKT 63V 100n - K
C237	32233 - 224K	C MKT 63V 220n - K
C210	32233 - 224K	C MKT 63V 220n - K
C221	32233 - 224K	C MKT 63V 220n - K
C402	32236 - 224K	C MKT 250V 220n - K
C827	32233 - 334K	C MKT 63V 330n - K
C831	32233 - 334K	C MKT 63V 330n - K
C823	32233 - 334K	C MKT 63V 330n - K
C824	32233 - 334K	C MKT 63V 330n - K
C121	32233 - 334K	C MKT 63V 330n - K
C825	32233 - 334K	C MKT 63V 330n - K
C826	32233 - 334K	C MKT 63V 330n - K
C407	32236 - 474K	C MKT 250V 470n - K
C810	32234 - 822J	C MKT 100V 8.2n - J
C815	32234 - 822J	C MKT 100V 8.2n - J
C813	32319 - 222J	C MKP 1.6KV 2.2n - J
C408	32319 - 822J	C MKP 1.6KV 8.2n - J
C805	32316 - 224K	C MKP 250VAC 220n - K
C806	32316 - 224K	C MKP 250VAC 220n - K
C102	32510 - 474M	C E 16V 0.47u
C224	32510 - 105M	C E 16V 1u
C406	32514 - 105M	C E 160V 1u
C814	32514 - 105M	C E 160V 1u
C228	32510 - 225M	C E 16V 2.2u
C232	32510 - 225M	C E 16V 2.2u
C301	32510 - 225M	C E 16V 2.2u
C124	32510 - 225M	C E 16V 2.2u
C701	32510 - 225M	C E 16V 2.2u
C506	32510 - 225M	C E 16V 2.2u
C205	32510 - 106M	C E 16V 10u
C213	32510 - 106M	C E 16V 10u
C212	32510 - 106M	C E 16V 10u
C105	32510 - 106M	C E 16V 10u
C230	32510 - 106M	C E 16V 10u
C104	32510 - 106M	C E 16V 10u
C103	32510 - 106M	C E 16V 10u
C113	32510 - 106M	C E 16V 10u
C828	32512 - 106M	C E 35V 10u
C117	32510 - 226M	C E 16V 22U
C118	32510 - 226M	C E 16V 22u
C710	32510 - 226M	C E 16V 22u
C115	32510 - 336M	C E 16V 33u
C235	32510 - 476M	C E 16V 47u
C238	32510 - 476M	C E 16V 47u
C404	32514 - 476M	C E 160V 47u
C819	32514 - 476M	C E 160V 47u
C809	32510 - 107M	C E 16V 100u
C812	32510 - 107M	C E 16V 100u
C123	32511 - 107M	C E 25V 100u
C808	32511 - 107M	C E 25V 100u
C508	32512 - 107M	C E 35V 100u
C509	32512 - 227M	C E 35V 220u
C807	32517 - 157M	C E 385V 150u
C208	3251A - 337M	C E 10V 330u
C821	32511 - 477M	C E 25V 470u
C302	32511 - 477M	C E 25V 470u
C820	32512 - 108M	C E 35V 1000u
C507	32511 - 158M	C E 25V 1500u
C403	32516 - 225M	C E 250V 2.2u
TRANSISTORS		
Q804	41211 - 0011	BC 548
Q102	41211 - 0011	BC 548
Q201	41211 - 0011	BC 548
Q703	41211 - 0011	BC 548
Q701	41211 - 0011	BC 548
Q203	41211 - 0011	BC 548
Q803	41211 - 0011	BC 548
Q702	41211 - 0011	BC 548
Q801	41211 - 0060	BU 508 AF
Q802	41211 - 0310	BD 234
Q401	41211 - 0330	BU 508 DF
Q402	41211 - 0015	BC 639
Q101	41211 - 0020	BF 240
COILS AND TRANSFORMERS		
L201	04501 - 0091	TOKO 7 KM - LC
L801	04501 - 0040	1.0 uH M LAL 03
L802	04501 - 0103	4.7 uH K LAL 03

POSITION	CODE NO	DESCRIPTION
L207	04501 - 0103	4.7 uH K LAL 03
L703	04501 - 0103	4.7 uH K LAL03 TB (AXIAL)
L704	04501 - 0103	4.7 uH K LAL03 TB (AXIAL)
L705	04501 - 0103	4.7 uH K LAL03 TB (AXIAL)
L204	04501 - 0103	4.7 uH K LAL 03
L205	04501 - 0103	4.7 uH K LAL 03
L206	04501 - 0103	4.7 uH K LAL 03
L202	04501 - 0101	6.8 uH K
L706	04501 - 0175	22 uH K LAL02 TB (AXIAL)
L707	04501 - 0175	22 uH K LAL02 TB (AXIAL)
L708	04501 - 0175	22 uH K LAL02 TB (AXIAL)
L701	04501 - 0060	22 uH K LAL03 TB (AXIAL)
L702	04501 - 0060	22 uH K LAL03 TB (AXIAL)
L803	04501 - 0111	47 uH K LAL 05
L203	04501 - 0099	1.0 uH M LAL02 TB (AXIAL)
L101	04501 - 0110	12 uH J LAL'02
L401	04502 - 0050	AT4042 - 90 LINERITY COIL
L805	04502 - 0010	CI - 10 0.14 mH
T802	04502 - 0030	COIL - LINE FILTER
T401	04312 - 0022	AT2079 - 10A FBT
T402	04312 - 0100	AT4043 - 01 (HOR.DRIVE)
T801	04312 - 0152	002190109 (SMPS)
	FILTERS AND X'TALS	
Z202	41601 - 0050	SFE 5.5 MB
X101	41601 - 0032	CSA 10.0 MHz TF01 (RES.)
Z206	41601 - 0039	OFW G 1962
Z203	41601 - 0054	TPS 5.5 MB
X201	41601 - 0009	X'TAL 4.43 MHz
	DIODES	
D201	41101 - 0012	1N 4148
D203	41101 - 0012	1N 4148
D204	41101 - 0012	1N 4148
D205	41101 - 0012	1N 4148
D202	41101 - 0012	1N 4148
D108	41101 - 0012	1N 4148
D701	41101 - 0012	1N 4148
D209	41101 - 0012	1N 4148
D106	41101 - 0012	1N 4148
D104	41101 - 0012	1N 4148
D101	41101 - 0012	1N 4148
D107	41101 - 0012	1N 4148
D401	41101 - 0150	BAS - 11
D501	41101 - 0161	BAX - 12A
D801	41101 - 0180	BYW - 54
D802	41101 - 0180	BYW - 54
D803	41101 - 0180	BYW - 54
D804	41101 - 0180	BYW - 54
D805	41101 - 0170	BYD - 33J
D810	41101 - 0170	BYD - 33J
D403	41101 - 0170	BYD - 33J
D807	41101 - 0170	BYD - 33J
D809	41101 - 0170	BYD - 33J
D808	41101 - 0181	BYW - 95B
D402	41101 - 0200	BZX - 79C8V2
D812	41101 - 0029	ZTK - 33B
D102	41101 - 0035	ZPD - 5V1
D103	41101 - 0035	ZPD - 5V1
D208	41101 - 0035	ZPD - 5V1
D806	41101 - 0015	1N 4007
	IC'S	
IC201	42191 - 0256	TDA 8362
IC301	42191 - 0340	TDA 7056A
IC202	42191 - 0258	TDA8395
IC501	42191 - 0251	TDA3653B
IC203	42191 - 0253	TDA4661
IC801	42191 - 0046	TDA4601
IC802	42191 - 0310	LM7808
IC803	42191 - 0311	LM7812 :
IC804	42191 - 0021	LM7805
IC104	42191 - 0501	LTM9034
IC103	42191 - 0295	24C02
IC102	42191 - 0330	PCA84C641/ CTV322S
IC101	42191 - 0350	LA7910
	VARIABLE RESISTORS	
VR501	33213 - 0030	VR 100R
VR502	33213 - 0070	VR 4K7
VR801	33213 - 0070	VR 4K7
VR201	33213 - 0080	VR 10K
VR202	33213 - 0080	VR 10K

POSITION	CODE NO	DESCRIPTION
	SWITCHES	
SW801	36501 - 0054	SWITCH PUSH PWR
SW103	36501 - 0041	SWITCH TACT KPT2105
SW104	36501 - 0041	SWITCH TACT KPT2105
SW102	36501 - 0044	SWITCH TACT KPT2105 - 31
SW501	36692 - 0230	SERVICE SWITCH (MALE)
SW501	36692 - 0231	SERVICE SWITCH (FEMALE)
	SOCKETS AND CONNECTORS	
P401	36691 - 0003	4P CONECTOR (MALE) D.Y.
P301	36692 - 0025	POST HEADER 3P (2P)
P801	36692 - 0004	2P CONNECTOR (MALE)
P802	36692 - 0004	2P CONNECTOR (MALE)
P701	36692 - 0250	SCART SOCKET
	44202 - 0029	CABLE CRT - HP GND.
	44202 - 0029	CRT - CRTPCB GND
	44202 - 0273	GND. CABLE CRT PCB -MAIN PCB
P601	36692 - 0301	HOUSING 4P
P602	36692 - 0302	HOUSING 3P
P601	44202 - 0057	CABLE CRT - PCB (4)
P602	44202 - 0056	CABLE CRT - PCB (3)
	METAL MATERIALS	
Q801	29942 - 0149	HEAT - SINK (U TYPE)
Q401	29942 - 0026	HEAT - SINK (L TYPE)
IC802	29942 - 0154	HEAT - SINK (AL PROFILE)
IC805	29942 - 0154	HEAT - SINK (AL PROFILE)
IC501	29942 - 0155	HEAT - SINK (AL)
IC301	29942 - 0028	HEAT - SINK (DKP - CU)
IC801	29942 - 0171	HEAT - SINK (DKP - NI)
JV501	29942 - 0014	GT PIN 2.3 x 14 mm
Q401	73182 - 0025	SCREW 2.9 x9.5
Q801	73182 - 0025	SCREW 2.9 x9.5
IC501	73182 - 0020	SCREW 2.9 x6.5
IC301	73182 - 0020	SCREW 2.9 x6.5
IC802	73182 - 0020	SCREW 2.9 x6.5
IC805	73182 - 0020	SCREW 2.9 x6.5
IC801	73182 - 0020	SCREW 2.9 x6.5
	OTHERS	
TU201	29902 - 0025	TUNER
LD109	41401 - 0011	STBY LED 5 mm (RED)
R801	33170 - 180N	POSISTOR A180N
R804	33170 - 502P	PTC J29 (P190)
F801	36102 - 0005	FUSE 2.5A T
LD109	29932 - 0321	GUIDE LED
	29932 - 0340	OMEGA TYPE CABLE TIE
	29932 - 0075	CABLE TIE 10 cm. (4 pcs.)
	99992 - 0030	1 mm. Ø SILICON RUBBER TUBE(8 cm.)
	99992 - 0031	1 mm. Ø Non-Inflammable Tube (6.5 cm.)
F801	29932 - 0600	CLIP FUSE
F801	29932 - 0600	CLIP FUSE
	SIZE CHANGES	
	21"	
R605	33135 - 4R7J	RS 1 /4 W 4.7R - J
C408	32319 - 752J	C MKP 1.6KV 7n5 - J
	34001 - 0021	P943 MAIN PCB
TU201	29902 - 0025	TUNER
	14 "	
R508	33111 - 751J	RD 1/8 W 750 - J
R828	33111 - 363J	RD 1/8 W 36K - J
	34001 - 0021	P943 MAIN PCB
TU201	29902 - 0301	TUNER

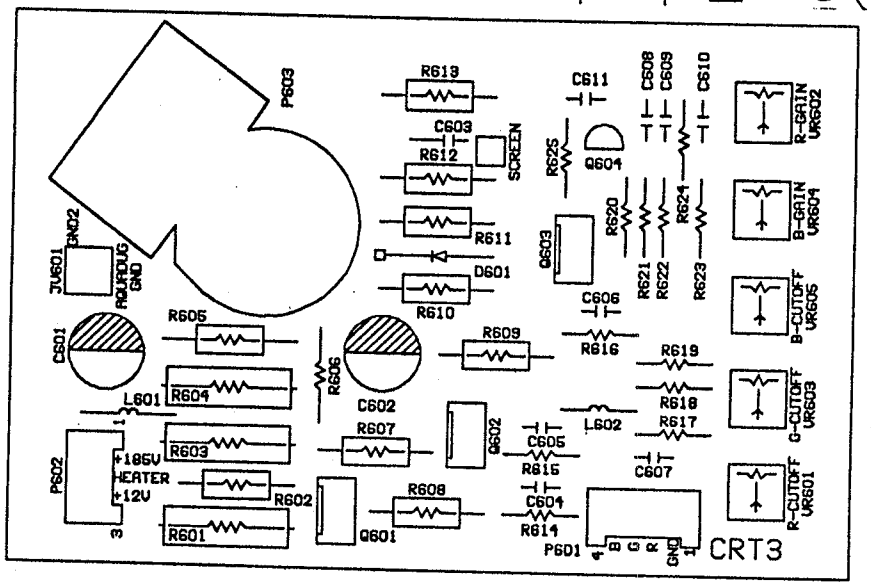
POSITION	CODE NO	DESCRIPTION
'20" - 21" CRT PCB ASS'Y (CRT22)		
RESISTORS		
R625	33113 - 151J	RD 1/4 W 150 - J
R624	33113 - 561J	RD 1/4 W 560 - J
R621	33113 - 751J	RD 1/4 W 750 - J
R622	33113 - 751J	RD 1/4 W 750 - J
R623	33113 - 751J	RD 1/4 W 750 - J
R617	33113 - 102J	RD 1/4 W 1K - J
R618	33113 - 102J	RD 1/4 W 1K - J
R619	33113 - 102J	RD 1/4 W 1K - J
R620	33113 - 102J	RD 1/4 W 1K - J
R614	33113 - 152J	RD 1/4 W 1K5 - J
R615	33113 - 152J	RD 1/4 W 1K5 - J
R616	33113 - 152J	RD 1/4 W 1K5 - J
R606	33113 - 335J	RD 1/4 W 3M3 - J
R607	33114M - 104J	RC 1/2 W 100K - J
R608	33114M - 104J	RC 1/2 W 100K - J
R609	33114M - 104J	RC 1/2 W 100K - J
R605	33135 - 1R8J	RS 1 W 1R8 - J
R601	33154 - 152K	RC 1/2W 1K5 - J
R610	33154 - 152K	RC 1/2W 1K5 - J
R611	33154 - 152K	RC 1/2W 1K5 - J
R612	33154 - 152K	RC 1/2W 1K5 - J
R613	33154 - 152K	RC 1/2W 1K5 - J
CAPACITORS		
C604	33113 - 121JC	CC 50V B 120p - J
C605	33113 - 121JC	CC 50V B 120p - J
C606	33113 - 121JC	CC 50V B 120p - J
C608	33113 - 471K2B	CC 50V C 470p - K
C609	33113 - 471K2B	CC 50V C 470p - K
C610	33113 - 471K2B	CC 50V C 470p - K
C611	33113 - 102K2B	CC 50V B 1n - K
C607	33113 - 104Z2F	CC 50V F 100n - Z
C613	33113 - 104Z2F	CC 50V B 100n - Z
C601	33516 - 106M	CE 250V 10u
C602	33516 - 106M	CE 250V 10u
TRANSISTORS		
Q601	41211 - 0021	BF 871
Q602	41211 - 0021	BF 871
Q603	41211 - 0021	BF 871
Q604	41211 - 0070	BC 558
VARIABLE RESISTORS		
VR601	33213 - 0050	VR 1K
VR602	33213 - 0050	VR 1K
VR603	33213 - 0050	VR 1K
VR604	33213 - 0050	VR 1K
VR605	33213 - 0050	VR 1K
SOCKETS AND CONNECTORS		
P603	36691 - 0032	CRT SOCKET 033 - 05500 - 10
P601	36692 - 0301	HOUSING 4P
P602	36692 - 0300	HOUSING 3P
OTHERS		
L601	04501 - 0060	22uH K LAL03 TB
L602	04501 - 0060	22uH K LAL03 TB
D601	41101 - 0170	BYD 33J
14" CRT PCB ASS'Y (CRT03)		
CRT PCB		
	34002 - 0085	CRT03 PCB
RESISTORS		
R625	33113 - 151J	RD 1/4W 150 - J
R624	33113 - 561J	RD 1/4W 560 - J
R621	33113 - 751J	RD 1/4W 750 - J
R622	33113 - 751J	RD 1/4W 750 - J
R623	33113 - 751J	RD 1/4W 750 - J
R617	33113 - 102J	RD 1/4W 1K - J
R618	33113 - 102J	RD 1/4W 1K - J
R619	33113 - 102J	RD 1/4W 1K - J
R620	33113 - 102J	RD 1/4W 1K - J
R614	33113 - 152J	RD 1/4W 1K5 - J
R615	33113 - 152J	RD 1/4W 1K5 - J
R616	33113 - 152J	RD 1/4W 1K5 - J
R606	33113 - 335J	RD 1/4W 3M3 - J

POSITION	CODE NO	DESCRIPTION
R607	33114M - 104J	RD 1/2W 100K - J
R608	33114M - 104J	RD 1/2W 100K - J
R609	33114M - 104J	RD 1/2W 100K - J
R605	33136 - 1R5J	RS 2W 1R5 - J
R601	33136 - 183J	RS 2W 18K - J
R603	33136 - 183J	RS 2W 18K - J
R604	33136 - 183J	RS 2W 18K - J
R602	33154 - 152K	RC 1/2W 1K5 - K
R611	33154 - 152K	RC 1/2W 1K5 - K
R610	33154 - 152K	RC 1/2W 1K5 - K
R612	33154 - 152K	RC 1/2W 1K5 - K
R613	33154 - 152K	RC 1/2W 1K5 - K
CAPACITORS		
C604	32113 -121JC	CC 50V NPO 120p - J
C605	32113 -121JC	CC 50V NPO 120p - J
C606	32113 -121JC	CC 50V NPO 120p - J
C608	32113 -471K2B	CC 50V B 470p - K
C609	32113 -471K2B	CC 50V B 470p - K
C610	32113 -471K2B	CC 50V B 470p - K
C611	32113 -103Z2F	CC 50V F 10n - Z
C607	32113 -104Z2F	CC 50V F 100n - Z
C603	32119 -102K2B	CC 2KV B 1n - K
C602	32516 - 106M	CE 250V 10u
C601	32516 - 106M	CE 250V 10u
TRANSISTORS		
Q601	41211 - 0021	BF 871
Q602	41211 - 0021	BF 871
Q603	41211 - 0021	BF 871
Q604	41211 - 0070	BC 558
VARIABLE RESISTORS		
VR601	33123 - 0050	VR 1K
VR602	33123 - 0050	VR 1K
VR603	33123 - 0050	VR 1K
VR604	33123 - 0050	VR 1K
VR605	33123 - 0050	VR 1K
SOCKETS AND CONNECTORS		
P603	36691 - 0034	CRT SOCKET 033 - 06600 - 13
P601	36692 - 0301	HOUSING (4P)
P602	36692 - 0300	HOUSING (3P)
OTHERS		
D601	41101 - 0170	BYD 33J
L601	04501 - 0060	22uH LAL03
L602	04501 - 0060	22uH LAL03
REMOTE CONTROL		
	36202 - 0022	REMOTE CONTROL SM22
	06112 - 0050	1.5V BATTERY

CODE NO	DESCRIPTION	Q'TTY
MISCELLANEOUS 20"		
PLASTIC MATERIALS		
29932 - 0409	DOOR - PANEL CONTROL	1
29932 - 0166	INDICATOR WINDOW	1
29932 - 0192	KNOB - ON/OFF	1
29932 - 0254	INLAY - PANEL CONTROL	1
29932 - 0011	FRONT CABINET	1
29932 - 0018	BACK CABINET	1

CODE NO	DESCRIPTION	Q'TTY
29932 - 0135	RAIL MAIN PCB (R)	1
29932 - 0136	RAIL MAIN PCB (L)	1
29932 - 0137	RAIL MAIN PCB (BACK)	2
29932 - 0062	BOSS CABINET	4
29932 - 0141	BOSS CRT	4
29932 - 0072	CLAMPER D.COIL	2
29932 - 0350	CABLE TIE 20cm.	2
29932 - 0075	CABLE TIE 10 cm.	5
29932 - 0071	CLAMPER AC - CORD	1
29932 - 0068	HOLDER AC - CORD	1
29932 - 0069	HOLDER FBT CABLE	1
	METAL MATERIALS	
29942 - 0047	METAL PLATE (TOP)	1
29942 - 0046	METAL PLATE (BOTTOM)	1
29942 - 0083	GRILLE WOOFER (R)	1
29942 - 0088	GRILLE WOOFER (L)	1
29942 - 0069	BADGE BRAND	1
44202 - 0040	TBC WIRE 104 cm.	1
73202 - 0010	SPRING COIL, WIRE TBC	1
73182 - 0095	SCREW 6.3x25 (CRT)	4
73182 - 0069	SCREW 3.9x16 (BACK CAB.)	6
73182 - 0050	SCREW 3.5x9.5 (RAIL PCB)	2
73182 - 0202	SCREW 2.9x9.5 (SPEAKER)	8
73182 - 0601	WASHER CRT 1/4	4
	SOCKET AND CABLES	
36692 - 0133	LEAD CONNECTOR ASS'Y SPEAKER	1
44202 - 0228	7x0.20 CABLE (WHITE) 34 cm.	1
44202 - 0201	7x.015 CABLE (BROWN) 22 cm.	1
44202 - 0209	7x0.15 CABLE (PINK) 28 cm.	1
44202 - 0029	CABLE, TBC GND 40 cm.	1
	SPEAKER GND 20 cm.	1
36691 - 0051	LEAD CONNECTOR ASS'Y 4/0 DEF. YOKE	1
	OTHERS	
99992 - 0501	CUSHION FELT	2
44512 - 0015	AC CORD ASS'Y	1
99992 - 0024	4mm Ø TUBE 21 cm.	1
18291 - 0010	SPEAKER 8R/3W	2
40111 - 0100	CRT (ITC) A48ECR11x16	1
04502 - 0066	DEGAUSSING COIL	1
	MISCELLANEOUS 21"	
	PLASTIC MATERIALS	
29932 - 0415	DOOR - PANEL CONTROL	1
29932 - 0166	INDICATOR WINDOW	1
29932 - 0192	KNOB POWER	1
29932 - 0253	INLAY - PANEL CONTROL	1
29932 - 0017	FRONT CABINET	1
29932 - 0034	BACK CABINET	1
29932 - 0062	BOSS CABINET (SIDES)	4
29932 - 0059	BOSS CABINET (TOP)	2
29932 - 0144	BOSS CRT	4
29932 - 0072	CLAMPER D.COIL	2
29932 - 0350	CABLE TIE 20cm.	2
29932 - 0075	CABLE TIE 10 cm.	5
29932 - 0071	CLAMPER AC - CORD	1
29932 - 0064	HOLDER AC - CORD	1
29932 - 0060	HOLDER FBT CABLE	1
29932 - 0115	BRACKET, SPEAKER (R)	1
29932 - 0116	BRACKET, SPEAKER (L)	1
	METAL MATERIALS :	
29942 - 0087	GRILLE WOOFER	2
29942 - 0068	BADGE BRAND	1
44202 - 0040	TBC WIRE 114 cm.	1
73202 - 0010	SPRING COIL, WIRE TBC	1
73182 - 0601	WASHER CRT 1/4	4
73182 - 0020	SCREW 2.9x6.5 (TWEETER)	4
73182 - 0202	SCREW 2.9x9.5 (SPEAKER)	8
73182 - 0095	SCREW 6.3x25 (CRT)	4
73182 - 0069	SCREW 3.9x16 (BACK CAB.)	8

CODE NO	DESCRIPTION	Q'TTY
	SOCKET AND CONNECTORS	
36692 - 0133	LEAD CONNECTOR ASS'Y SPEAKER	1
44202 - 0209	7x0.15 CABLE (PINK)	1
	4 x 8 cm.	4
44202 - 0201	7x.0.15 CABLE (BROWN) 70 cm.	1
44202 - 0029	CABLE, TBC GND 40 cm.	1
	SPEAKER GND 28 cm.	1
36691 - 0051	LEAD CONNECTOR ASS'Y 4/0 DEF. YOKE	1
	OTHERS	
44512 - 0015	AC CORD ASS'Y	1
99992 - 0024	4mm Ø TUBE 45 + 18 + 13 cm.	1
32613 - 225M	CE 50V 2.2u NP	2
04502 - 0009	COIL 100uH	1
18291 - 0021	SPEAKER 8R/5W	2
18291 - 0020	TWEETER	2
29931 - 0040	EJECTOR	1
40111 - 0099	CRT (ITC) A51EAL55x10	1
04502 - 0066	DEGAUSSING COIL	1
	MISCELLANEOUS 14"	
	PLASTIC MATERIALS	
29932 - 0413	DOOR - PANEL CONTROL	1
29932 - 0166	INDICATOR WINDOW	1
29932 - 0192	KNOB POWER	1
29932 - 0253	INLAY - PANEL CONTROL	1
29932 - 0009	FRONT CABINET	1
29932 - 0033	BACK CABINET	1
29932 - 0260	MOUNTING BASE	2
29932 - 0072	CLAMPER D.COIL	2
29932 - 0075	CABLE TIE 10 cm.	7
29932 - 0071	CLAMPER AC - CORD	1
29932 - 0064	HOLDER AC - CORD	1
29932 - 0060	HOLDER FBT CABLE	1
	METAL MATERIALS	
29942 - 0067	BADGE BRAND	1
44202 - 0040	TBC WIRE 75 cm.	1
73202 - 0010	SPRING COIL, WIRE TBC	1
73182 - 0601	WASHER CRT 1/4	4
73182 - 0069	SCREW 3.9x16 (BACK CAB.)	4
73182 - 0082	SCREW 4.8x25 (CRT)	4
	SOCKET AND CONNECTORS	
36692 - 0131	LEAD CONNECTOR ASS'Y SPEAKER	1
44202 - 0209	7x0.15 CABLE (PINK) 31 cm.	1
44202 - 0029	CABLE, TBC GND 30 cm.	1
36691 - 0051	LEAD CONNECTOR ASS'Y 4/0 DEF.YOKE	1
	OTHERS	
44512 - 0011	AC CORD ASS'Y	1
99992 - 0024	4mm Ø TUBE 46 cm.	1
	23 cm.	1
04502 - 0011	LOSS COIL 350 uH	1
18292 - 0030	SPEAKER 8R/3W	2
29931 - 0040	EJECTOR	1
40111 - 0099	CRT (ITC) A34EAC01x06	1
29101 - 0010	ROD ANTENNA	1
29901 - 0060	TRANS - MATCHING	1
04502 - 0065	DEGAUSSING COIL	1


P603
R613
C611
C608
C609
C610
R-GAIN VR602
C603
R612
SCREEN
R625
Q604
R620
R624
B-GAIN VR604
R611
Q603
R621
R622
R623
JV601
GND2
ADJROUG GND
D601
R610
C606
B-CUTOFF VR605
CS01
R605
R609
R616
R619
R606
R604
L601
C602
R618
L602
G-CUTOFF VR603
R607
R617
Q602
C605
R615
C607
P602
+185V
HEATER
+12V
R603
R602
R608
C604
R614
R-CUTOFF VR601
R601
Q601
P601
B G R GND
CRT3

14" CRT

PIN 36 OF IC201
SANDCASTLE .(H)

PIN 42 OF IC201
VERTICAL RAMP GENERATOR .(V)

PIN 37 OF IC201
SUBCARRIER OUT FOR SECAM.(4.43MHz)

Q 801 COLLECTOR

VERT. RAMP CURRENT WAVEFORM.(V)
R507

PIN 13 OF IC201
INTERNAL CVBS INPUT.(H)

PIN 43 OF IC201
VERTICAL DRIVE.(V)

PIN 37 OF IC201
HORIZONTAL DRIVE.(H)

PIN 30 OF IC201
R-Y OUT.(H)

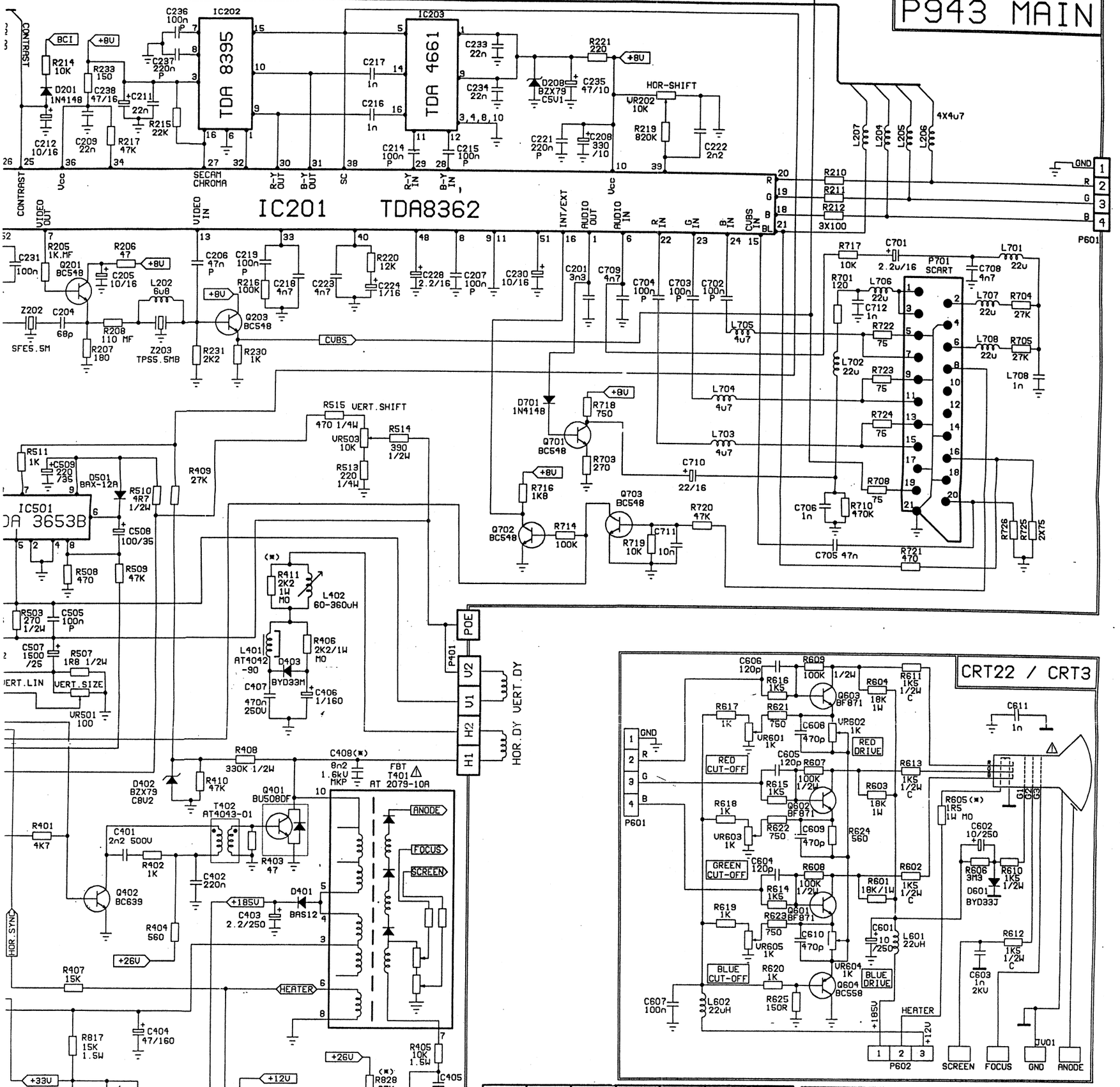
PIN 31 OF IC201
B-Y OUT.(H)

PIN 8 OF IC 801
PULSE OUTPUT

* VOLTAGES HAVE AND THE GROUND VOLTMETER WHIL
* WAVEFORMS ARE BAR SIGNAL.
* CIRCUIT DESIGN SUBJECT TO CHA

HOT
COLD
DEGAUSSING COIL
POWER CORD WITH 0.5 mH LINE FILTER
INPUT 250V/2.5A T
220 V.
MAIN
FUSE
SW801
LINE FILTER
T802
R801 POSISTOR R180N
R802 W 2R2 5W
4X 2A2/1KV
C805 22/250VAC
C806 22/250VAC
C807 150/385
D801 D802 D803 D804
4X BYW54
C815 8A2/100V P
R813 10K
R814 47/1W MO
R820
4M7/1W UR37
C822 3A9/4KV
T801
TDA 4601
IC801
R808 220
R811 1K2
R812 100P
C811 100P
R809 100
C809 100/16
D806 IN4007
C810 8A2/100V P
R807 100K
R810 270K/1.5W
C808 100/25
D805 BYD33J
R803 2K7/1W MO
R804 PTC
C814 1/160
R805 820K
C812 100/16 UR801 4K7
D807 BYD33J
R813 10K
C815 8A2/100V P
4X BYW54
C805 22/250VAC
C806 22/250VAC
C807 150/385
D801 D802 D803 D804
4X 2A2/1KV
R802 W 2R2 5W
R801 POSISTOR R180N
DEGAUSSING COIL
POWER CORD WITH 0.5 mH LINE FILTER
INPUT 250V/2.5A T
220 V.
MAIN
FUSE
SW801
LINE FILTER
T802
C802
C804
C803
C801
L801 .68 UH
L802 4.7UH
R809 100
D806 IN4007
C809 100/16
R808 220
R811 1K2
R812 100P
C811 100P
R807 100K
R810 270K/1.5W
C808 100/25
D805 BYD33J
R803 2K7/1W MO
R804 PTC
C814 1/160
R805 820K
C812 100/16 UR801 4K7
D807 BYD33J
R813 10K
C815 8A2/100V P
R814 47/1W MO
R820
4M7/1W UR37
C822 3A9/4KV
T801
L803 47UH
R816 220/2W MO
C813 2N2/1.6KV KP
R815 27
D808 BU 508 AF
D809 BYV95B
C816 220P 500V
C819 47/160
C817 470P
D810 BYD33J
C818 470P
R818 0.47 1/2W
C820 1000/35
C821 470/25
R819 2R7
L803 47UH
R816 220/2W MO
C813 2N2/1.6KV KP
R815 27
D808 BU 508 AF
D809 BYV95B
C816 220P 500V
C819 47/160
C817 470P
D810 BYD33J
C818 470P
R818 0.47 1/2W
C820 1000/35
C821 470/25
R819 2R7
T801
D802 BD234
R825 470
R823 22M MO
R824 4K7
C824 330N P
C825 330N P
C826 330N P
C827 330N P
R827 470
C823 330N P
C831 330N P
R822 4K7
R821 4K7
D803 BC548
D804 BC548
R826 22K
LD109 (LED)
ON/OFF
+11GU
+33U
+26U
+16U
+12U
+8U
+5U STBY
+5U
+33U
D812 ZTK33B
L805 140UH
IC803 LM78L05
IC802 LM78L08
IC801 LM7812
R901 4K7
R819 2R7
R820 3A9/4KV
C822
R804 15K
HOR SYNC
R825 470
D802 BD234
R823 22M MO
R824 4K7
C824 330N P
C825 330N P
C826 330N P
C827 330N P
R827 470
C823 330N P
C831 330N P
R822 4K7
R821 4K7
D803 BC548
D804 BC548
R826 22K
LD109 (LED)
ON/OFF
+11GU
+33U
+26U
+16U
+12U
+8U
+5U STBY
+5U
+33U
D812 ZTK33B
L805 140UH
IC803 LM78L05
IC802 LM78L08
IC801 LM7812
R901 4K7
R819 2R7
R820 3A9/4KV
C822
R804 15K
HOR SYNC
TUNER TU201
IF
VT
BU
BH
BL
+12U
AGC
RGC
SAW FILTER OFW K 1962
Z206
L203 1UH
C203 1N
C204 68P
C202 2N2
R202 1K
R204 1K
R209 8K2
D108 IN 4148
C213 10/16
R234 6K8
R218 100
C218 100N P
R223 330K
R203 1K
SFE5.SM
R225 3P3
C225 470P
C226 100N P
SW501 SERVICE
C231 100N
C232 2.2/16
R205 1K.MF
D201 BC548
D201 IN4148
R214 10K
C212 10/16
R213 1K2
R222 5K6
C229 100N P
C227 22N
C228 18P
R201 390
C202 12P
X201 4.43 MHz
R202 6K8
L201 TOKO-7KM
C209 220 /35
R211 1K
C501 10N P
R501 10K
R502 3K9
C502 4N7
C504 1N
R503 270 1/2W
C506 2.2/16
C507 1500 /25
R505 82K
R506 10K
R509 22K
VERT.LIN
VERT.LIN
R223 330K
R204 1K
VERT. DRIVE
VER FB
HOR. DRIVE
AUDIO OUT
IDENT
AFC
IF
IF
AGC
VIDEO OUT
CONTRAST
COLOR
BRIGHT
Vcc
SIF IN
VERT. DRIV.
VERT. FB.
VERT. OSC.
HOR. DRIV.
AUDIO OUT
IDENT
TDA 7056A IC301
C301 2.2/16
R301 2K2
R302 1K
R303 2R2 1/2W
C302 470/25
C303 22N
C304 100N
P301
SP1 2X8 OHM 3W
SP2
C239 10N
R135 100K
C119 47N
R134 100K
R130 820
C106 2N2
R129 2K7
Q102 BC548
C124 2.2/16
R115 10K
R101 10K
C102 0.47/16
R114 18K
R120 8K2
D101 IN4148
R131 100K
C104 10/16
R118 10K
C118 22/16
R132 220K
R116 22K
C113 10/16
R126 27K
C103 10/16
R102 10K
C105 10/16
R105 100K
R104 10K
C111 22N
C110 22N
C109 22N
C123 100/25
R113 330
R111 6K8
R112 6K8
C107 100P
R107 12K
R110 47K
R136 18K
C108 100N
C121 330N P
R133 18K
R108 1K5
R109 5K6
D102 BZX79 C5V1
R115 10K
D103 BZX79 C5V1
R106 10K
X101 10MHZ
C122 18P
C114 18P
L101 12UH OSC
C112 100N
C120 100N
R125 10K
D104 IN 4148
R124 100
J060
R123 100
R121 3K3
R122 3K3
C101 100N
D0209 D0204 D0205 4XIN4148
P101 TELETEXT
POE
SCL
SDA
+5U
CVBS
FBL
B
G
R
GND
IC102 PCA 84C641 (CTV 322S)
IC103 PCF 8582E
IC104 LTM 9034
D107
R127 47
C117 22/16
R128 47K
R106 10K
D103 BZX79 C5V1
R115 10K
D102 BZX79 C5V1
X101 10MHZ
C122 18P
C114 18P
L101 12UH OSC
C112 100N
C120 100N
R125 10K
D104 IN 4148
R124 100
J060
R123 100
R121 3K3
R122 3K3
C101 100N
D0209 D0204 D0205 4XIN4148
P101 TELETEXT
POE
SCL
SDA
+5U
CVBS
FBL
B
G
R
GND
IC102 PCA 84C641 (CTV 322S)
IC103 PCF 8582E
IC104 LTM 9034
D107
R127 47
C117 22/16
R128 47K

P943 MAIN



CRT TYPE	PHILIPS A34EAC 01X06 CRT 3	SAMTEL A34JAE 10X11 CRT 3	SAMSUNG A48ECR 11X16 CRT 22	PHILIPS A51EAL 55X10 CRT 22	NOKIA A51ECQ 10X01 CRT 22	SAMSUNG A51ECR 11X21 CRT 22
R411	2K2 1W	——	——	2K2 1W	——	——
R503	270 1/2 W	270 1/2 W	270 1/2 W	270 1/2 W	150 1/2 W	270 1/2 W
R508	750	750	470	470	470	470
R605	1R5 1W MO	1R2 1W MO	1R8 1W MO	4R7 1W MO	3R9 1W MO	4R7 1W MO
R828	36K	33K	27K	27K	27K	27K
C408	8n2 1600V	7n5 1600V	8n2 1600V	7n5 1600V	7n5 1600V	8n2 1600V
L402	350 uH	——	——	100uH	——	——
P603 CRT SOCKET	MINI NECK	MINI NECK	NARROW NECK	NARROW NECK	NARROW NECK	NARROW NECK

IC201 TDA8362

PIN	VOLT	PIN	VOLT	PIN	VOLT	PIN	VOLT
1	8.0	14	2.6	27	5.8	40	3.8
2	5.8	15	3.8	28	4.0	41	2.4
3	5.8	16	0.0	29	3.8	42	2.7
4	7.8	17	2.3	30	1.5	43	2.5
5	1.0	18	2.0	31	1.5	44	4.4
6	9.8	19	2.0	32	1.7	45	4.0
7	8.2	20	2.0	33	4.8	46	4.0
8	1.7	21	0.2	34	2.7	47	3.8
9	0.0	22	3.2	35	2.0	48	4.9
10	7.8	23	3.2	36	7.8	49	1.5
11	0.0	24	3.2	37	0.4	50	3.5
12	9.2	25	2.4	38	1.1	51	4.8
13	8.4	26	1.6	39	8.3	52	6.6

IC202 TDA8395

PIN	VOLT	PIN	VOLT
1	1.7	9	1.6
2	1.1	10	1.6
3	7.8	11	NC
4	NC	12	NC
5	NC	13	NC
6	0.0	14	NC
7	2.8	15	1.1
8	4.1	16	5.8

IC203 TDA4661

PIN	VOLT	PIN	VOLT
1	5.3	9	5.3
2	NC	10	0.0
3	0.0	11	2.8
4	0.0	12	2.8
5	1.1	13	NC
6	NC	14	1.4
7	NC	15	NC
8	0.0	16	1.4

IC301 TDA7056A

PIN	VOLT
1	NC
2	15.6
3	0.0
4	0.0
5	4.8
6	0.0
7	0.0
8	7.8
9	NC

IC501 TDA3653B

PIN	VOLT
1	11.8
2	6.8
3	10.3
4	10.4
5	14.4
6	8.7
7	10.1
8	15.8
9	24.3

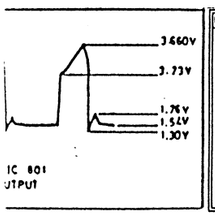
IC101 LA7910

PIN	VOLT
1	0.0
2	12.0
3	5.8
4	0.0
5	0.0
6	14.2
7	0.0
8	NC
9	12.0

IC801 TDA4601

PIN	VOLT
1	1.9
2	0.0
3	1.4
4	0.0
5	12.1
6	26.1
7	1.1
8	5.6
9	25.8

■ ALL VOLTAGES ARE DC
■ NC=NO CONNECTION
■ BANT IS VHF3 FOR IC101



COMPONENT IDENTIFICATION

F:FUSIBLE RESISTOR
MF:METAL FILM RESISTOR
MO:METAL OXIDE RESISTOR
W:WIRE WOUND RESISTOR
C:SOLID(COMP.) RESISTOR
P:POLYESTER FILM CAP.
KP/MKP:POLYPRO.FILM CAP.

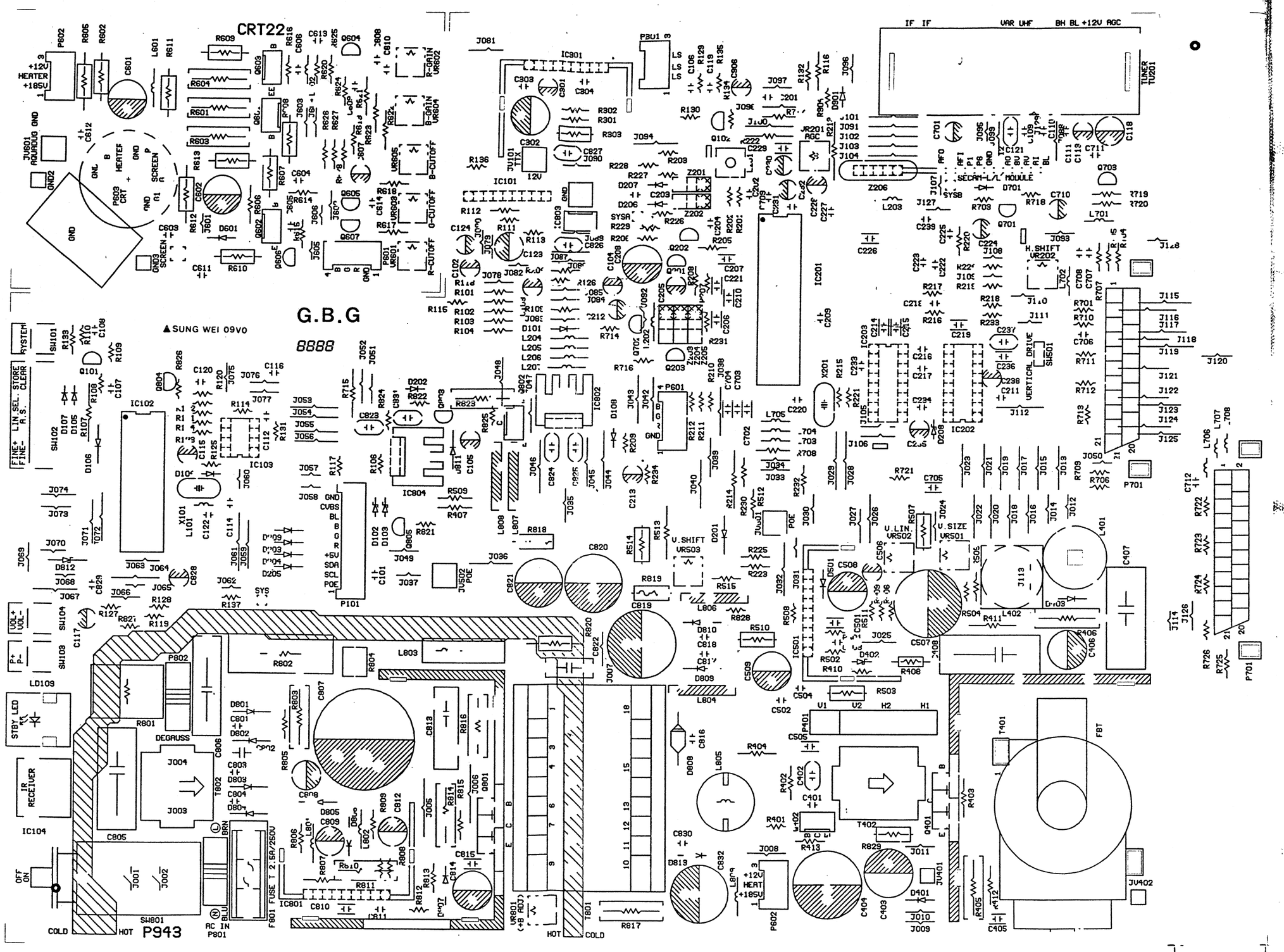
CERAMIC CAPACITOR

ELECTROLYTIC CAP.

VOLTAGES HAVE BEEN MEASURED BETWEEN THE IC PIN AND THE GROUND PIN OF THAT IC , BY A DIGITAL VOLTMETER WHILE THE MAINS IS 220 VAC +/- 10 %. WAVEFORMS ARE REFERRED TO A STANDART PAL COLOR BAR SIGNAL.
CIRCUIT DESIGN AND VALUES OF COMPONENTS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

P943 PAL SECAM BG

48202-0036



P943 MAIN PCB

14" - 21" PCB